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THE AMERICAN MEDICAL MONTHLY.

A P R I L, 1856.

ESSAYS, MONOGRAPHS, AND CASES.

*The Late Dr. Charles Caldwell.**

Instead of a formal review of Dr. Caldwell's autobiography, we propose to give, chiefly from the materials furnished by it, a succinct sketch of his life from its opening to its close. We do not know in what other way we can so well do justice to our readers, all of whom are familiar with Dr. Caldwell's name, but all of whom are not familiar with the fact, that he was a man famous in two hemispheres before they were born, and, as it respects some of them, before their parents were born. We do not know in what other way we can do anything like justice to the life of one so eminent, so long distinguished—in the two fields of thought and action the foremost man, as we think, that the profession in this country has yet produced—a life so prolonged, connecting the present with the past two generations, and so full of diversified labor, whose purpose, if not always wise, was ever thoughtful and earnest, and never ignoble or mean.

* Autobiography of Charles Caldwell, M.D. With Preface, Notes, and Appendix. By Harriet W. Warner. Philadelphia: Lippincott, Grambo & Co. 1855. pp. 454. 8vo.

In pursuing this course, it may be that we shall also do something towards another object. It has long seemed to us that the medical profession, as a body, treats its own history and that of its distinguished members with too little regard—with a neglect, indeed, that is positively criminal. That profession includes within itself, and has included at all periods of its existence, much of the best intellect and best culture of its day. If we look around us at this moment, we shall find in its ranks those who are most eminent among the wise, the virtuous, the good ; if we look backwards, we can trace it as far as human records go, and even beyond these, by a long line of illustrious men who are the highest types and exemplars of our common humanity. Yet, how little do we know of these, or any of these !

The pages of this journal bear witness that, heretofore, it at least has endeavored to avoid this reproach, and to stimulate even while it gratified such curiosity as existed. We trust that it will continue to do this. We hope that, as time and the occasion serve, it will summon from their thrones in the past others of these grand old men—the sovereigns who ruled, if not with kingly hand, yet with far more than kingly power, the intellect and opinions of their time—

The dead, but sceptred sovereigns, who still rule
Our spirits from their urns.

Dr. Caldwell was of pure Hibernian descent, both of his parents having been natives of Tyrone county, in the province of Ulster, Ireland. His father belonged to a family which had been domiciled for many generations in England and the North of Ireland, but which was traceable under the name of *Colville* to Normandy in France ; his mother was descended from Col. Murray, famous for his martial exploits during the memorable siege of Londonderry.

Of his remote ancestors we have few details ; they seem, however, to have been conspicuous, on the paternal side, for great mental and bodily vigor retained to a ripe old age, and on both the paternal and maternal side, for incorruptible integrity, for loyalty to church and country, for skill in the use of arms, and for high and gallant bearing. In most of these

respects, Dr. Caldwell gave the most undoubted evidences of his descent.

His father in early life was a lieutenant in the British service, and on one or two occasions distinguished himself; finding, after his marriage, that the pay was insufficient to support his family, he sold out his commission, and, declining all offers of assistance from his elder brother, emigrated to America about the year 1752. He settled first in Delaware, where he engaged in mercantile pursuits, with such success as to be enabled in a few years to purchase a valuable body of land in Orange, now Caswell county, in the State, or as it was then called, the province of North Carolina. To these lands he subsequently removed, and here his youngest child, Dr. Charles Caldwell, was born, on the 14th of May, 1772.

The parents of Dr. Caldwell destined him for the ministry of the Presbyterian church, of which they both were members, the father being a ruling elder; and to this end they purposed to give him a liberal education. In effecting this there was the usual difficulty incident to new and sparse settlements—a scarcity of teachers of any sort, and a total absence of competent ones. Despite all the exertions his father could make, no school could be procured for him until he was far advanced in his ninth year. At this period his sole attainment was a knowledge of the alphabet; but he proved to be an apt and ardent student, and pushed forward so rapidly, that by the close of his fourteenth year he had mastered all the scholastic and academical learning which the best institutions of his native State then afforded. The only obstacles that he met with were in his teachers, all of whom, with a single exception, proved either ignorant, or destitute alike of skill and faithfulness in the discharge of their duties. This, which might have proved ruinous to a youth less spirited and ambitious, served only to stimulate him to redoubled effort. It was, perhaps, on the whole, of essential service to him; for, being thus thrown upon himself, he came much sooner to know the extent of his own powers and resources, and to acquire that self-confidence and self-reliance which aided and sustained him throughout his long and brilliant career.

A single incident will disclose the spirit in which he began

and continued his education. To avoid interruption from the domestic avocations of the family, he assisted during one of the earliest school vacations in erecting a little cabin for himself, adjacent to the paternal one. This was his study and lodging-room, and here he bent himself to his books often from dark till near daylight. The recluse habits thus early entered upon clung to him through life, he having never been able, he tells us, to employ his mind with satisfaction "except in silence at least, if not also in solitude."

A strong incentive to exertion was the presence, among his school-fellows, of several European youths, who were disposed to look down upon him and other natives of the soil as altogether inferior. Hence arose contests in all forms of action, corporeal and intellectual, carried on with great zeal but with the utmost friendliness, and continued until the repeated triumphs of the American youths rendered their superiority no longer a matter of doubt. This was, we suppose, the inception of a favorite opinion, one which he strenuously advocated on all suitable occasions, to wit, that the Caucasian natives of this country are superior, both in mental and physical qualities, to any other people on the face of the earth.

Among all his teachers, the only one that afforded him any considerable aid was a gentleman named Harris, under whom he began the study of the classics early in his twelfth year. To him he was indebted not only for much sound and able instruction, but also, he adds, for "whole tomes of excellent advice, which was highly serviceable to me in after years, and which even now, in the winter of my life, I remember with a flush of gratitude and pleasure." Harris subsequently repaired to the college at Princeton, in New Jersey, where his abilities were soon recognized, and where, unfortunately, he died just as a career was opened to him. Many years afterwards Dr. Caldwell hunted out his neglected grave, replaced the weeds that covered it by some flower-bearing plants, and erected over it a neat marble tablet.

At the beginning of his fifteenth year, Caldwell, by the recent loss of both parents, found himself virtually alone in the world, at least thenceforward subject to no control save that of his own judgment. It was his desire to enter one of

the distinguished Northern colleges, in order to complete his elementary education, but he was unable to command the necessary funds. Meantime his career of high-wrought exertion at school had attracted notice, and his reputation for steadiness and sobriety, and for attainments, insignificant as he felt the latter to be, had extended far beyond the neighborhood where he dwelt. Hence, it was not long before an offer reached him from a remote and wealthy settlement, to take charge of a flourishing grammar-school, called Snow Creek Seminary, the principal of which was about to leave. The prospect of a liberal income induced him to accept the offer at once, although there were two circumstances which, in his own view, as well as that of others, rendered the undertaking extremely hazardous. One was, that the institution had previously been governed by men of mature age; the other, that it contained several pupils from five to ten years older than himself. Yet his success was immediate and decided. From the beginning he had the respect, and he soon gained the confidence and friendship of his pupils. At the head of this school he continued about two years, when he was desired to undertake the establishment of a similar one in an opulent Presbyterian settlement, distant about fifty miles, in Iredell county. The terms were not only exceedingly liberal, but in the highest degree flattering to one who had not yet reached his eighteenth year. The parties interested committed to him the entire organization and direction of the institution, and the result justified their generous confidence. His success was as marked in this as in the former instance, and in both was fit augury of that which in after life attended his efforts in founding schools of medicine. Pupils flocked to the *Centre Institute* from every quarter; even those of the Snow Creek Seminary soon followed their late teacher, so that the latter establishment rapidly declined, and in a few months was discontinued.

In each of these establishments the smallest part of his labor was that performed in the school-room. He was himself a closer student than any of his pupils. In order to perform his functions with the utmost completeness and efficiency, it was his custom to prepare every evening for the recitations of the succeeding day, especially those of the higher classes, as care-

fully as the classes themselves. If he had evening engagements of any duration in advance, recitations for a corresponding number of days were prepared at a single sitting. His reading, moreover, beyond the curriculum of school studies, was extensive and thorough. It included history, biography, travels, poetry—especially dramatic and epic, orations, sermons of distinguished divines, natural and revealed religion, and anthropology. To the latter subject he was drawn more immediately by the perusal of an *Essay on the Causes of the Variety of Complexion and Figure of the Human Species*, published, in 1787, by Dr. S. S. Smith, of Princeton. The facts and reasonings of this essay seemed to him then inconclusive, and his subsequent studies did not render them less so. When, some years later, a second and enlarged edition of it appeared, he reviewed it at some length, and with such force as materially to damage it as a work of authority. During this period he was also a frequent contributor to the public press, his object being twofold, to acquire facility and correctness in the expression of his thoughts, and to awaken such an interest in science and literature as would promote the welfare of his school. He even courted the muses a little, but of these efforts he remembered nothing save the fact. Meanwhile, he did not neglect any social duties which his position demanded of him, nor forego anything afforded by the intelligent society around him; on the contrary, being ambitious to excel as a conversationist, he rather sought society as a field both for study and practice. Hence the time devoted to reading and other forms of mental labor was deducted mainly from his hours of rest.

Having conducted the affairs of the Centre Institute for the space of two years, with the most gratifying success, he retired from it. It ranked then, and for many years afterwards, among the first educational institutions in the State, if, indeed, it was not the very first.

The time had now arrived for him to choose a profession. We have already stated, that from infancy he was destined for the ministry of the Presbyterian church, of which his family, through many generations, had been strict adherents. His education had been shaped, and much of his reading directed to, this particular end. In knowledge of the Sacred Scrip-

tures, especially, his proficiency was such, even in his twelfth year, as to excite admiration among those very competent to judge. Early in his studies, however, as we learn from one of his essays,* "he had conceived a few opinions in religion, deemed uncanonical, under the influence of which he could not, consistently with his sentiments of truth and honor, select and pursue the clerical profession." At the same time, he indicated a preference for that of law, but the strongly expressed opposition of his father induced him then to forego this, and now respect for his parents' memory proved a restraint equally powerful. The military spirit which he inherited, and which, no doubt, had been fostered and nourished by the warlike movements of the stormy times of his youth, led him next towards the army; but, partly by argument, and partly by appeals to his feelings, he was persuaded likewise to abandon this design, and, finally, to devote himself to medicine. In order to enjoy all possible advantages for acquiring a knowledge of his selected vocation, he repaired at once to Salisbury, and placed himself under the tuition of Dr. Harris, an eminent practitioner resident there, and a brother of his former and only favorite teacher. Dr. Harris was not deficient either in talents or professional skill, but was sadly so in the means for imparting instruction. Caldwell soon became aware of this; nevertheless, the fear of wounding his preceptor's feelings restrained him from immediately going elsewhere, and indeed led him to remain in Salisbury about a year and a half. This he speaks of "as the most indefensible waste of time" ever committed by him. However that may be, he certainly was not idle; for, in addition to some knowledge of medicine, he gained not a little in other departments of science and literature. His companion in the latter studies was a gentleman several years his senior, named Henderson, an accomplished scholar, and one of the most eminent lawyers and brilliant orators in the commonwealth. It was the custom of the two to meet once a week, or oftener, for the critical perusal of some favorite author, the reading of an original paper, or the

* *Thoughts on the Original Unity of the Human Race.* Second edition. Preface. p. viii.

discussion of some question in science, in morals, or in metaphysics. Nor was the newspaper neglected by Caldwell. He seems indeed to have been early impressed with the importance of attaining facility in that department of writing, as though he had some prescience of the vast influence to be exerted by the press, either as an organ or as a director of public opinion—an influence which even now is paramount to any other, and perhaps to all others.

During his sojourn at Salisbury, he first saw General Washington, and was for several days a good deal about his person. This formed one of his most cherished recollections of the place. The impression made upon him by that great man, so far from being diminished, seemed to grow stronger and more vivid, with the lapse of years. Washington's character, endowments, and services, were subjects that he never tired of contemplating, and constitute the theme of some of his earliest and his latest public efforts. The President was then making the tour of the southern portion of the Union, and Caldwell, being an officer in a volunteer cavalry corps, was selected to command the escort which received him on the borders of the State, and accompanied him during most of his journey through it. The intimate knowledge, geographical and historical, which he possessed of the country, enabled him to acquit himself of his duties intelligently and handsomely, and Washington publicly thanked him therefor.

Having remained with Dr. Harris about eighteen months, Caldwell felt that duty to himself did not admit of any further sacrifice, on the score of delicacy towards that gentleman, and he determined, therefore, to prosecute his future studies under the auspices of the Medical Department of the Pennsylvania University. For this purpose, he reached Philadelphia a few days before the beginning of the session of 1792-3.

He was now in his twenty-first year, but with a maturity of mind and body very rare in one so youthful. His scholarship, technically so called, was thorough and accurate; he had an extensive acquaintance with general literature and science; he conversed well, and displayed no mean powers as an orator; his tastes were formed on the best models; while all his faculties were admirably disciplined, and completely under the con-

mand of a severe and imperious will. To all this was joined a body cast in the largest mould, and thoroughly developed, and trained from youth up by all manly and athletic exercises. In running, leaping, and wrestling, he had few equals ; he excelled in the dance ; he was a splendid horseman. We may add that he was a perfect master of fence, and an unerring shot, both with rifle and pistol—no mean accomplishments in those days, when gentlemen settled their differences at the sword's point or the pistol's mouth ; and Caldwell had already shown, on more than one occasion, that he had neither the temper nor the disposition to decline such mode of settlement.

The Philadelphia medical school, after a separate existence of many years, had recently become a department of the University, and was just at the dawn of that splendid reputation, which it holds undiminished after the lapse of half a century. Its Faculty was composed of five members, who were distributed thus : Dr. Shippen, in the chair of Anatomy, Surgery, and Midwifery, with Dr. Wistar as adjunct ; Dr. Kuhn, in that of the Theory and Practice of Medicine ; Dr. Rush, in that of the Institutes of Medicine and Clinical Practice ; Dr. Hutchinson, in that of Chemistry ; and Dr. Griffitts in that of Materia Medica. With one or two exceptions these were all men of excellent culture, with mind and manners polished by prolonged residence in British and European capitals, and by European travel. Of them all, however, Rush seems to have been much the most active and diligent, as well as by far the most brilliant, showy, and attractive. Caldwell, therefore, soon singled him out as the one most likely to prove serviceable to him in the future, as well as the present.

During the whole period of his pupilage in the University, Caldwell was a very model of industry and assiduity. In order to have entire command of his time, he would admit no fellow lodger, paying a small premium for the privilege of being alone. He was studiously polite and courteous to his fellow pupils on the street, in the lecture-room, and at the hospital, but intimate with none of them. Except on business he did not visit them, or receive visits from them. For the first three years of his residence in Philadelphia, he declined all solicitations to parties of mere social enjoyment, and never spent an

hour from his study, save to attend literary, scientific, or medical societies, or to mingle with individuals from whose converse he expected to derive knowledge. During the sessions of the medical school, he never missed a lecture, except from sickness, was always present at the beginning of the lecture, occupied as far as practicable the same seat, and every day conducted a rigid self-examination, to see what addition had been made to his stock of knowledge. He found leisure, besides, to read, at stated hours, some of his favorite authors, and to compose, once or twice a week, analytical and critical articles for the press. These began with Rush's introductory address, which was adroitly framed to show that the native of America is equal, and perhaps superior, to the native of Europe. It was in fact a native American address, such as we have at the present day, with the difference that then a belief was entertained by many distinguished men, at home as well as abroad, that the American descendants of Europeans are degenerate both in body and mind; whereas, now-a-days, the notion is wide spread, or is widely spreading, that the native of America is a great deal superior, mentally and physically, and by all means politically, to his European ancestors, or even his foreign fellow-citizens. To Caldwell it was particularly gratifying to find so distinguished a man espousing doctrines which, during his own boyhood and youth, had been the occasion of many of his contests and triumphs, both physical and intellectual. No sooner, therefore, had he returned to his room than he penned a laudatory critique, adding some arguments of his own to those of the lecture, and this he sent to the *Aurora* newspaper, in which it appeared next morning, under the signature of "A Medical Student."

The practice thus begun, was continued once or twice a-week, as we have just stated, and confined almost exclusively to the lectures of Dr. Rush. The publications excited, from time to time, a good deal of attention in the class, and although their authorship was studiously concealed, it came at length to be generally attributed to Caldwell. Rush himself occasionally noticed the more elaborate ones, but of course without reference to the supposed source. At first they were mainly in approval, but Caldwell soon found himself compelled to dissent from some of his preceptor's peculiar notions, and this, he saw, was not acceptable

to the latter. On one occasion, after the appearance of a carefully written article, controverting some doctrines contained in the lecture of the day previous, Rush informed the students somewhat curtly that their business there was to learn, not to teach. After this, when the writer could not praise, he said nothing.

At the close of the Session, having determined to remain in Philadelphia until he attained the doctorate, Caldwell formed a scheme of study to be pursued until the beginning of the next course of lectures. This scheme, which included regular visits to the hospital and a course of lectures on Botany and Natural History, by Dr. Benjamin S. Barton, having been submitted to Rush, with whom he had by this time established some intimacy, and been approved of by him, (save that he thought it too severe,) was adhered to with unswerving fidelity for several months, or until the beginning of the memorable epidemic of yellow fever, in August, 1793.

The scenes that ensued on the outbreak of that pestilence—the distress, the suffering, the terror, the dismay—have had no parallel on this continent. The appalling circumstances which marked the terrible epidemic in 1853, in New Orleans, or that not less terrible one of the past year, in Norfolk and Portsmouth, are as nothing in comparison. *Then*, in Philadelphia, the belief in the contagiousness of yellow fever was firmly entertained by all classes, professional as well as non-professional. Hence, the inhabitants, including many physicians, fled as precipitately as though their homes were to be sacked and pillaged by a barbarous and savage foe, or as though the city, like those in the plain of Shinar, was doomed to instant destruction from the vengeance and wrath of an insulted God. The roads leading into the country were filled by the flying families, and the wayside strewed with their household goods. By sea and land the city was avoided ; commerce sought other ports, travel other resting-places ; her ships swung idly in her idle waters, her busiest mart was a desert. Trades, arts, handicraft, science, literature, all stood still ; all business, of whatsoever sort, public and private, was suspended. Nothing was to be heard in the streets save sounds of woe, mingled with the rattle of the constant hearse ; nothing to be seen save

a few citizens, pale with fear, the dead hurried forth to burial, and here and there a solitary physician, hastening from house to house, on his errand of mercy—an errand too often fruitless.*

The family in which Caldwell resided, being near to the infected district, and partaking largely of the general dread, was among the first to leave the city. Determined himself not to retreat, but to continue his studies if practicable, and also to learn as much as possible of the epidemic, he sought a home in another, and soon found himself again alone from a similar cause. He sought another and another, with like result; and perceiving that the families which decided to remain were indisposed to admit inmates, through fear of contagion, his perplexity became extreme. In this state of things, meeting with Rush, he learned that a hospital for yellow fever patients had just been established at Bush Hill, about one mile from the city, and that it was greatly in need of young men qualified to act as resident pupils and aids. Expressing not only his perfect readiness, but his strong desire, to engage in the service, he received from Rush a note of introduction, with which he set out on the instant, and within an hour's time was busy among the sick, the dying, and the dead.

At first he was alone, but other young men, encouraged by his example, and losing their dread of contagion, at length volunteered their services. So rapid was the influx of patients, and so restricted for a time the amount of accommodation, that the aids, attendants, and nurses, were compelled to eat and to sleep in the very chambers of the sick. It was not uncommon for Caldwell, worn out with his labors and vigils, to cast himself at the feet, or by the side, of a patient, for a little sleep, and, on waking, to find the patient a corpse, or himself deluged with the matter of "black vomit."

In such arduous duties, and in an atmosphere charged with exhalations from the sick, he continued until the epidemic subsided, his health remaining unaffected during the whole period.

* Rush says: "At one time there were but three physicians who were able to do business out of their houses, and at this time there were, probably, not less than 6000 persons ill with the fever!"

Like his preceptors, he was in the beginning a believer in the contagiousness of yellow fever, and so far as he knew, was devoting himself to certain death by his entrance into the hospital. His observations while there, and in successive epidemics that desolated Philadelphia, led him in a few years to renounce this belief and warmly to advocate the opposite one. He was, indeed, among the first to declare for the non-contagiousness of the disease, in opposition to Rush and the followers of the latter, with whom he carried on a long controversy on this subject.

Soon after resuming attendance on the lectures, he prepared a paper for the Philadelphia Medical Society, on the subject of Yellow Fever, in fulfilment of a promise made to Rush. The latter, as the first advocate of its domestic origin, was anxious to establish that doctrine in the public mind, and also to support, by the experience of the hospital, the mode of treatment which he instituted, and on account of which he had been very soundly abused. In the discussions that ensued on the reading of the paper, Caldwell, then only twenty-two years of age, took a very active and distinguished part. In point of fact he was well nigh alone in its support, since neither Rush nor Physick, the only members who sympathized with him, had any aptitude for extempore speech or ever attempted it, the former at least rarely, the latter never. The admiration excited by his paper, and by his readiness, tact, and resources in debate, gratified him exceedingly, and did not fail to minister to the ambition which even now lurked, as it were, in the recesses of his spirit.

The events of this evening did indeed affect his fortunes a full quarter of a century afterwards, in a form and to a degree of which he had not at the time the remotest conception. A young man, not bred to the profession, who was present, by invitation, at the reading of the paper, and the debate which followed, afterwards removed to Lexington, in Kentucky, and became a member of the Board of Trustees of Transylvania University. When the trustees were engaged in an earnest effort to put the Medical Department into efficient operation, this gentleman strongly urged his colleagues to invite Dr. Caldwell to aid in organizing and administering it. He repre-

sented to them what he had heard and seen in Philadelphia twenty-five years before, and declared that from that moment he had never abandoned the conviction that Caldwell was destined to become, at some time and place, "the founder and leader of a great school of medicine." The advice was taken, as we shall see hereafter, and the fame of the school that grew up under Caldwell's fostering hand has become historical.

During the remainder of the session he mingled largely in the exercises of the medical society, partly to cultivate and discipline his powers as a disputant, and partly to extend his growing reputation among the members. To enhance still further the idea of his readiness and efficiency, he made it a rule to leave the society immediately on the close of a debate, and before the annunciation of the subject of the next evening's discussion—that annunciation being the last business of the meeting. As he had little or no intercourse with any of the students, he thus kept himself ignorant of the subject to be discussed until the moment of his arrival; and that this was the case, his character for candor and truthfulness permitted no one to doubt. Meantime he continued his communication with the public through the press, mainly now on the causes and prevention of yellow fever. In some of these articles will be found, it is thought, the first public recommendation of the introduction of the Schuylkill water into Philadelphia. To Rush, Physick, and Caldwell, is that city largely indebted for the consummation of this measure. They urged it forwards for years, against the most violent opposition—an opposition proceeding mainly from wealthy proprietors. These saw that the introduction of water was constantly associated with the idea of the local origin of the late epidemic, and they firmly believed that by the establishment of this idea in the public mind, the commercial and all other interests of the city would be irretrievably injured. At length better views prevailed, and a plan of water-works, adopted in 1797, was executed in 1801; but proving inefficient, or too expensive, it was changed, in 1819, for the present simple, admirable, and efficient system.

At the end of this session, Caldwell passed an examination in every way creditable and honorable, but being dissatisfied with it himself; he declined applying for a degree, and resumed

the scheme of study which he had pursued the previous year—with one important addition. At the desire of Rush, he undertook a translation of Blumenbach's *Physiology*, from the original Latin. In this and other mental labors he was occupied between nineteen and twenty hours a-day; he slept but three, or three and a half hours; and for exercise, in addition to his walks to and from the lectures he attended, he resorted to daily practice with the small sword. At the end of six months the translation was finished, and he found himself considerably enfeebled, from such intense application.

Just at this time the troubles in Western Pennsylvania, known as the "Western Insurrection," or "Whisky Rebellion," reached that point where it was thought necessary for the national authorities to interfere; and to this end the President called out about fifteen thousand troops from Virginia, Pennsylvania, and New Jersey. As it was the first thing which had yet occurred to test the strength and power of the federal government, the patriotic feelings of all classes were highly aroused, and the call to arms was answered with alacrity. In no one did those feelings burn stronger than in Caldwell, and, joined to his martial blood, they urged him irresistibly towards the army. What he coveted, was a post in the line; but he was unacquainted with any one of sufficient influence to obtain that, save Washington, and to him, learning how he was besieged with applicants, many of whom had served under his eye in the Revolution, motives of delicacy forbid him to apply. That which his ingenuity was likely to fail in, chance finally accomplished, though in a form somewhat different from his first wishes. He was fortunate enough, at this juncture, to save from injury and possible death, the wife and daughter of Gen. Gurney, who was to command the Philadelphia city and county volunteers, in the expedition to the West. Through the General's influence, Caldwell, in a few days, received the appointment of regimental surgeon, and in that capacity was attached to the troops just named.

The military campaign which followed, though brief, was full of incidents, and not without influence on his present and subsequent fortunes. His mental and personal accomplishments soon rendered him conspicuous; he formed the acquaintance of

some of the ablest and most distinguished men in the country, whose friendship he retained ever after ; and when he returned to Philadelphia,—where a few weeks before, after a residence of two years, he was scarcely known beyond certain medical circles,—he found his name familiar to hundreds, if not thousands, through the letters which officers and privates of the Philadelphia troops had written to their friends and to the public papers. Some of his own letters had found their way to the public, and heightened not a little his growing reputation as a writer.

The interest that he had thus awakened, it was in his power to make profitable. Gen. Hamilton gave him his choice between a commission in the army, and a secretaryship of legation, insisting, as he had once before, that Caldwell was out of place in the medical profession ; the French Minister offered him a commission in the military service of France ; while another party strongly urged him to make a voyage to Canton, in a merchant vessel, as supercargo and surgeon—a post highly respectable, and, at that time, very lucrative. The latter offer, notwithstanding his patrimony was now sadly diminished, he declined at once, but secured it for a young medical friend, who realized a very considerable sum from it. In regard to the two former, he wavered for a moment, and probably but for the influence of an accomplished female friend, he would have been heard of in the history of diplomacy, or of war, rather than in that of medicine.

These events were also not without their sinister influences. His associations in the Western campaign, the friendships that he formed, and the notice which he attracted, had the effect to spoil him somewhat, and to lead him into a tone of manner towards those he did not desire as acquaintances, whom he thought meddlesome, or whom he regarded as inferior to himself in mind and attainments, altogether unwarrantable, and certainly very *regrettable* as respected his own interests. He thus laid the foundation of enmities which years afterwards came in between him and some of his most cherished ambitions. All this was plain to him later in life, and he does not fail to caution young men constituted like himself and placed in similar circumstances :—“ If they cannot extinguish their feelings of con-

tempt, let them at least so control them as not to reveal them by actions or words. Of these tasks, though the former may not be practicable to them, the latter is. Every man when in health may, if he please, bridle his tongue, and restrain from action all his other voluntary muscles. And that is all the present case requires of him."

Having declined all the tempting offers made to him, Caldwell resumed his attendance on the lectures, which were now in progress, and mingled as usual in the exercises of the Medical Society. In the Spring (1795), his translation of Blumenbach left the press. He added to the original a few notes and an appendix, which contain, we believe, the germs of doctrines that he was found advocating fifty years later.

At the end of the next Session (1796), he requested another examination, preparatory to his applying for the doctorate, and desired that it might be a searching one. In this respect he was gratified. The examination, conducted, as was then the custom, in presence of the entire Faculty, by each member of it in turn, covered a wide field of knowledge, and consumed about half a day. It was brought to a conclusion by Dr. Shippen's handing him over to "Brother Wistar," as he termed that gentleman, whose turn came last, with the request that they should use the Latin language, and so "talk to each other like the elder and younger Pliny." Though Dr. Wistar was as much surprised at this as Caldwell, the request was complied with, and both acquitted themselves handsomely.

It was the rule at that day (and it is to be regretted that it is not now) for the candidate to print his thesis and furnish a copy to each member of the Faculty and of the Board of Trustees, in whose presence, moreover, it had to be publicly defended. The thesis composed by Caldwell for the occasion embraced the subjects of *Hydrocephalus Internus*, *Cynanche Throchealis*, and *Cholera Infantum*, three affections concerning which not much had then been written. In the discussion of these subjects, Caldwell controverted some of the teachings and doctrines both of Wistar and Rush. For example: The former, to prove the communication existing between the cells of the areolar or cellular tissue of all parts of the body, was accustomed to adduce the fact that, in certain cases of dropsy, the

swelling of the feet observed in the evening disappears during the night, and is replaced by that of the face in the morning, and this, in its turn, by that of the feet in the evening. This he explained as a direct transfer of serous fluid from one part to another, through the agency of the cellular tissue ; in other words, that the fluid which distends the face in the morning, gravitates during the day, through this tissue, to the feet, and thence returns, in the same way, during the recumbency of the body at night, to the head. The veriest tyro in medicine would smile now at this, yet had it been gravely inculcated for years by the teacher of anatomy in the oldest school in the country. Wistar perceived at once and acknowledged the correctness of the explanation offered by Caldwell, paid him a handsome compliment for the ingenuity displayed, and never afterwards repeated the error in his lectures.

Rush's conduct was very different. There were several matters in the thesis offensive to him, and he indulged in a most intemperate and violent attack, so violent, indeed, as to draw from the provost, Dr. Ewing, something of a rebuke. Caldwell, in reply, though powerfully excited, retained his self-control, and was haughty, unyielding, and defiant. Rush finally became so exasperated, that he refused to attach his signature to the diploma which the Trustees, by an unanimous vote, had decreed to the candidate, unless the latter would retract some things which he had said, and apologize for them. Caldwell declined doing either, at the same time assuring the irate professor that he would soon convince him that he could do without his name.

Some months after this, Rush expressed, through Dr. Rittenhouse, who was present at the graduating scene, a wish to sign the parchment, and did so ; but beyond a formal and silent bow when they met in their daily walks, no intercourse took place between him and Caldwell until the year 1797, and even then the rupture was only partially repaired.

After graduating, Dr. Caldwell decided to remain in Philadelphia,—a professorship in the Medical School having now become the fixed purpose of his ambition. His success as a practitioner was altogether flattering. The expenses of his education had exhausted all of his means, and left him several

hundred dollars in debt ; but the proceeds of his business enabled him, in a short time, to discharge this, without inconvenience to his creditors or to himself. In the meanwhile he relaxed nothing of his application to study. Even his amusements were made subservient to his improvement in knowledge. He visited the two houses of Congress when in session, but only to study oratory ; he frequented the theatre, but only to catch the actor's art, and to qualify himself more thoroughly as a public reader, and as a dramatic and theatrical critic ; he mingled much in society, where his advantages of person and manner, and his fine colloquial powers, always made him welcome ; but the time thus spent, was carefully noted, and deducted from the hours for sleep, to be devoted to his books, or to writing. It was not infrequent for him, at this period, and long after, to make his appearance at two or three assemblies the same evening, spending a few minutes only at each ; and he thus earned the reputation of being one of the most idle and dissipated men of the city, when in truth he was one of the most laborious.

In 1797, yellow fever, which had existed sporadically for some weeks, again assumed the epidemic form, producing only less consternation than it did in 1793. At the same time there began a series of assaults upon Rush, with the design apparently to crush him. The papers teemed with the most violent, abusive, and even slanderous articles. On account of the particular treatment pursued and recommended by him, as well as his belief in the domestic origin of the epidemic, he was represented as a public enemy ; and every death that occurred, no matter what the remedies employed, was laid to his charge. To Caldwell this state of things soon became intolerable. Rush, it is true, was not his friend, but he was one opposed by many, and was suffering something like martyrdom in the cause of truth—a truth that Caldwell himself had labored to establish. His resolves, therefore, were soon taken, and having arranged with one of the city papers for the requisite space, he published anonymously two articles a-week in reply, dealing his blows so vigorously and effectively as very soon to afford material relief to Rush. In the very height of this warfare, he was himself stricken down with the prevailing fever, and instead of his regular communication, there appeared a brief notice postponing it

indefinitely. Rush, who had several times endeavored to penetrate his disguise, now sought the publisher again, with the same purpose. The latter was inexorable, stating that he had solemnly promised to conceal the author from every one, and especially from Dr. Rush. That was sufficient, as Rush knew it could be but one man. Without delay, therefore, he repaired, in company with Dr. Physick, to Caldwell's residence, and continued to visit him regularly until his convalescence was established. This incident led to a renewal of intercourse between them, which was not finally interrupted for several years.

After the disappearance of this epidemic, Physick, Caldwell, and a few others who held similar opinions, formed an association called the "Academy of Medicine," for the purpose of correcting public sentiment in regard to Yellow Fever, and of placing, by a combined effort, the doctrine of its domestic origin on a more solid basis. From some cause the association was shortlived; it published, however, one or two volumes of Transactions, to which Caldwell contributed liberally. He also delivered, by appointment, the semi-annual address required by the rules of the Academy, taking as a theme the laws of epidemic diseases. A copy of this was transmitted, through Dr. Lettsom, of London, one of his correspondents, to Dr. Hargarth, of Bath, who made it the subject of a sharp review in a published letter to Dr. Percival. Caldwell, thinking his reviewer evinced "neither delicacy, decency, nor truth," replied to him with such severity as to send him complaining through every coterie in Bath to the last hour of his life.

With his establishment in professional business, he engaged in that of private instruction, and in this also he was very successful. Among his pupils, from year to year, were a large number from the West and South, many of whom rose afterwards to great eminence—some as his colleagues in western schools, others in separate institutions, or as private practitioners. It is worthy of remark that he outlived nearly all of them. In 1803 he instituted the first clinical lectures in the Philadelphia Alms-house (long since demolished, and its inmates removed to the present Blockley Hospital), and continued them annually for several years, or until his removal, on political grounds, from the Faculty of the establishment. About the

same time he began the preparation of a series of lectures on certain select subjects, but not till 1810 did he venture formally to assemble a class to listen to him. So high was his own standard of excellence, that, even then, his performance seemed to him but to minister to the support of Gregory's declaration, that "on no leading branch of medicine can any man prepare a course of lectures, worthy of the subject, in less than twenty years." In 1816 he was appointed to the professorship of Geology and Natural History in the "Faculty of Physical Science," created in the University, and delivered four annual courses of lectures, to audiences embracing the most intelligent persons of the city. Besides these employments, his reputation as a public speaker led to frequent calls on him for addresses of a scientific or literary character, or for orations commemorative of some public event or some distinguished personage. Perhaps no one, during his residence in Philadelphia (extending to more than twenty-five years), appeared so often before the public, and certainly no one was more uniformly attractive and successful.

Nor is this all. His authorship, dating from the translation of Blumenbach's *Physiology*, in 1795, was continued almost without intermission. In 1801 appeared an address, delivered before the Philadelphia Medical Society, on *The Analogies between Yellow Fever and True Plague*. The views broached were so novel, and deemed so heterodox, that Rush predicted they would ruin the orator's reputation. They were original with Caldwell, who believed also that he was the first to proclaim them; but he afterwards discovered that he had been anticipated by a French physician, who wrote in 1720. In this year (1801) he published a volume entitled, *Medical and Physical Memoirs*, the chief portion of which consists of a "Physical Sketch of Philadelphia," and "Facts and Observations relative to the Origin and Nature of Yellow Fever." The latter, which first appeared serially in one of the city newspapers, discusses at some length the noncontagiousness of yellow fever. The remainder of the volume embraces an article on the "Winter Retreat of Swallows," and one on "Goitre," both of which were written in answer to some papers by Dr. Barton. In 1802 appeared his reply to Dr. Haygarth. In 1805 he circu-

lated a pamphlet entitled "Thoughts on a Health Establishment in the City of Philadelphia"; and translated Senac's *Treatise on Fevers*, from the Latin. In 1805-6 he edited two volumes of *Select Medical Theses*. An appendix to the first of these, contains, in the form of lectures, the results of some experiments on the vitality of the blood. These experiments were in continuation, or in complement of Hunter's, which Caldwell repeated preparatory to undertaking his own. The lectures added much to his reputation, both at home and abroad. Darwin, Currie, and Beddoes, of Great Britain, by their own desire, became his correspondents. The latter wrote to him: "The vitality of the blood can be no longer, even plausibly, denied or doubted. Your papers have conclusively established the doctrine." Even Rush, hitherto opposed to the doctrine, now adopted and taught it, referring for proof to Caldwell's papers, until the final rupture between them. In 1807 he made a translation of *Alibert on Intermittents*, from the French. In this year he wrote largely in opposition to *Quarantines*, mastering the Italian language, in order to get at the sources of the best literature on the subject. We may add, in this connection, that, as a member of the Board of Health, about this period, he succeeded in effecting a modification in the rigor of the quarantine laws, much to the relief and gratification of all engaged in commerce. In 1811 he published a translation of Dessault's work on *Fractures*, not the least valuable of his additions to the medical literature of the period. In 1814 he succeeded Nicholas Biddle in the editorship of the *Portfolio*, a literary monthly, originally conducted by Joseph Dennie. Caldwell had been a frequent contributor to this journal for several years, and as manager was eminently successful. A marked feature of it, while under his control, were his biographical sketches of distinguished Americans, living and dead, military, naval, and civil. In 1815 he furnished the biographies in *Delaplaine's Repository*. In the year following, at the request of Dr. Chapman, who had succeeded Barton in the University of Pennsylvania, he prepared copious notes for an edition of Cullen's *First Lines of the Practice of Physic*, which the former used as a text-book for many years. We may state here, that he composed the outline of Chapman's first course of lectures on eruptive diseases, and

also furnished him his own manuscript lectures on general pathology. In 1819 appeared his *Life of Gen. Greene*.

Between 1800 and 1819, several changes occurred in the Faculty of the Medical School, but no offer of place was made to Caldwell, though the general voice of the profession proclaimed his preëminent fitness. Moreover, all his efforts to have the Institutes of Medicine separated from the Theory and Practice of Medicine, and erected into a distinct chair, were resisted. The absurd union of the two, under Rush, dated from the resignation of Kuhn, in 1794, and was maintained under Barton, and, for several years, under Chapman. Caldwell's avowed purpose was to be a candidate for the chair, when created, and it was well known that his pretensions would be supported by the whole community. He urged the measure for years, by private appeals, by public speech, and, in 1818, by a pamphlet addressed to the trustees and the public, but all without effect. Yet, not long after he left Philadelphia, it was accomplished, and on the very grounds set forth by him. What the precise reasons were for this studied neglect of him, it is impossible to say. There are not, it seems to us, any more curious and inscrutable things in this world than the motives that sometimes govern a faculty of medicine and its board of trustees; and, if the wise but modest Agur, who was so puzzled by "the way of an eagle in the air, the way of a serpent upon a rock," and certain other matters, were alive now, he might very well add, "the way of a medical faculty" to the number of his puzzles. Rush's influence, during his lifetime, was against Caldwell, at least the latter so believed; and it was this conviction that led to their total estrangement, about midway the period of which we are speaking.

Looking at them from this distance, the two men do not appear to us well fitted for companionship. The necessary condition of Caldwell was absolute freedom of mind as well as body. The essential law of his intellect was independence, or self-dependence; in respect of that, he could submit to no trammels, save such as were self-imposed. On the other hand, Rush, with all his high qualities, lacked that which would have been the crowning excellence—he could not brook an equal where he wished to see a subordinate, a rival where he hoped

to find a retainer. He was charged full of fanciful but painfully elaborated theories, which he termed "the new principles of medicine," and which, he was firmly convinced, were to inaugurate a new era in the science. To oppose these, was to oppose him ; to assent to them, was a secure road to his favor : and the alternative of assenting, was to be silent. But Caldwell's independent judgment refused assent, and his silence was simply impossible. With him, utterance followed conviction as an absolute necessity ; the profound intellectual pride which led him to think for himself, leading him also to proclaim his thoughts. Thus there not only existed discordant elements of character, but there also was, from the very beginning, a divergence of opinion, which terminated, naturally, in non-intercourse and enmity. With this, however, Caldwell's strictures on Rush's favorite doctrines did not cease ; rather, instead of being occasional, they became frequent or constant, and instead of being couched in terms of compliment and courtesy, they conveyed severe and bitter censure. He singled out, in fact, Rush's doctrine of the *unity of disease*, his hypothesis of *life*, his theory that *fever is a convulsion of the arterial system*, and various other matters, as the special objects of his criticism. In lectures to his private classes, in public lectures, in the discussions of the Medical Society, in his notes to Cullen, and wherever else he could find or make an opportunity, he assailed them with all the force, and learning, and eloquence, that he possessed ; and not satisfied with simply refuting them, or beating them down by mere weight of argument, he turned their own logic against themselves, and held them up to laughter and to ridicule. This was not, to be sure, either the readiest or the speediest way of opening the doors of the Faculty ; but it was, nevertheless, *his way*, and the only way that he would have employed if he had remained in Philadelphia during all his after life.

Fortunately for the interests of medicine, as well as his own interests, he did not remain. Perceiving clearly that no ferment was to be obtained without resort to a course of action inconsistent with his feeling of self-dependence and his sense of personal dignity, he turned his views seriously towards the West—steadily declining invitations from a school at Balti-

more, and one in Western New York. His private pupils from the South and West had often importuned him to cast his lot among them, and attempt the building up of a great school of medicine in the Mississippi valley. He could see the wonderful future of that region—that it would be the seat, both in wealth and numbers, of the central and controlling power of the Republic ; its great heart, indeed, whose throbings would be felt in the remotest extremity. He was familiar with the aspects which nature presented there—with the scale of magnificence on which everything had been created ; and it was part of his creed, that the dwellers in the valley—if true to themselves—would be consonant with the nature around them. He was filled, at length, with the desire (an ambitious, but yet a noble and generous one) to mingle with that people, to aid in their development, to labor with them towards their high destiny, and at least to plant there the seeds of a truer and better medical philosophy than yet existed in America. From all these considerations, he waited only a favorable opportunity to leave Philadelphia for the West ; and this was not long in coming. In August 1819, he received an official letter of appointment to the chair of the Institutes of Medicine, in the Medical Department of Transylvania University, in Lexington, Ky. The chair, having been created expressly for him, was at once accepted. In five weeks from this time, he had closed up (not without heavy loss) the accumulated business of twenty-seven years, and, despite the protestations, the entreaties, even the tears of friends, was on his way to his new home.

The Transylvania Medical School had existed, in name at least, for about ten years. A faculty was first installed in 1809, but no lectures were delivered. A second faculty was formed in 1815, with similar result. A third faculty was organized in 1817, and instruction was given to a class of twenty pupils. The late Dr. Drake was a member of this faculty. The fourth is the one to which Dr. Caldwell was invited, and of which it was understood that he was to have the chief control.

On reaching Lexington, he found a state of things that might well have appalled a man less fearless and hardy, less full of resources, and less strong in the consciousness of his own powers and capabilities. He found some pupils awaiting him, but

there were no suitable lecture-rooms, no library, no chemical apparatus of any value, and not the shadow of a cabinet of any description. He found a Faculty with little or no experience as teachers, and composed, in part, of none of the best material of which to make teachers. He found the citizens heavy sufferers from a recent and severe conflagration ; and while some were doubtful of the success of the school, others were luke-warm towards it, and others utterly opposed to it. Happily, though, he was not of those who, having put their hands to the plough, even look back, much less turn back. Assembling such of the trustees as he could, he had the Faculty completed, he himself taking the chair of *Materia Medica*, in addition to that of the Institutes of Medicine. His colleagues were : Dr. Dudley, in Anatomy and Surgery ; Dr. Brown, in Practical Medicine ; Dr. Richardson, in Obstetrics ; and Dr. Blythe, in Chemistry. These gentlemen were all unknown ; even Dudley had given, as yet, but little promise of that rare skill as a surgeon, and those admirable qualities as a teacher, which have since rendered him so famous. All of them, too, in view of former failures, were anything else than sanguine as to the result of the enterprise ; but Caldwell breathed nothing but hope and confidence, and, under his inspiriting lead, they went to work ; if not, at first, with ease, at least in harmony and with determined purpose. Caldwell, avoiding or refusing all professional business, gave himself up absolutely to his duties in the school, and to the general interests of the latter. He composed and delivered the introductory address, he lectured four or five times a-week on each of the subjects committed to him ; as Dean he transacted all the business of the Faculty, he maintained a heavy correspondence with influential persons in the South and West, he addressed the Legislature at Frankfort in mid-winter —asking an appropriation of ten thousand dollars—at home he operated incessantly, through all channels, to awaken an interest in the school, and finally he delivered the valedictory address. This first session is but the type of many which followed ; so that, for years, his labors were of the most onerous character.

In the Summer of 1820, to solicit pecuniary aid for the infant school, and win to it the favor of the public, and especially of

the profession, he made the tour of Kentucky, went South to New Orleans, passed round by sea to Philadelphia, and visited a part of Virginia. In both objects he was successful. The funds of the Medical Department were decidedly increased, and the matriculates of the second session were in number more than double those of the first.

In 1821, he spent eight months in Europe, taking with him five thousand dollars, with which the Legislature had answered his request for ten, and six thousand loaned, but ultimately bestowed, by the city of Lexington. Every dollar of this money he expended in purchasing books and apparatus for the College, his expenses being paid out of his own pocket. The time of his visit was, in one respect, most opportune. The long unsettled condition of affairs on the continent had thrown many valuable libraries, professional and non-professional, into the hands of booksellers, and he was thus enabled to procure, at small cost (save of the labor of hunting through garrets), the choicest works of the fathers of medicine, from the days of Hippocrates downwards. In this way he made the library of the Transylvania school then, as perhaps it is now, richer in this particular department than that of any other school in the country.

Caldwell's reputation had long preceded him abroad, and he received marked attentions from the most distinguished scientific and literary personages. He retained among them many correspondents, every one of whom he survived. Whilst in Paris, he made the acquaintance of Gall and Spurzheim, and was led to study, and then to embrace, the phrenological doctrines taught by those gentlemen.

In 1823 Dr. Drake was added to the Faculty, in the chair of *Materia Medica*, Dr. Caldwell retaining that of the *Institutes of Medicine*, to which was joined *Clinical Medicine*. In 1825 Drake was transferred to the chair of *Practice*, and Dr. C. W. Short took the one vacated by him. In 1827, Dr. Cooke, of Virginia, succeeded Drake. These were the palmy days of the school. From the first session, the number of students swelled rapidly, being drawn not only from Kentucky and the States adjacent, but also from those bordering on the Gulf and the Atlantic. As early as 1823, in the fifth session, Caldwell saw two hundred assembled before him, and he felt that the mingled

prophecy and boast, which he had made to Rush years before, was fulfilled ; he was occupying a chair in a school equal in honor to that which had been shut upon him in Philadelphia. The classes continued much above two hundred for many years—in 1828 falling little short of three hundred—notwithstanding other and rival schools were springing up in the West.

This success was as splendid as it was gratifying ; but, to comprehend its magnitude, as well as to appreciate the labor and the courage it involved, the reader should bear in mind the difference between 1819 and 1856. That immense country beyond the Alleghanies was not then, as it is now, the seat of powerful States, the products of whose rich fields clothe and feed half the nations of the earth. Over most of it the savage still roamed, sole proprietor and occupant ; while from the remainder he had just been driven, subdued but sullen, with the scalps of women and children still hanging wet from his girdle, or still drying in his lodge. The rifle of the pioneer was not yet rusted from disuse ; the scars of his frequent wounds were still red ; the battle fields where lay the bodies of his comrades might yet almost be marked from afar by the lazy wheeling of the vultures. Save here and there in certain advanced lines, the West bank of the Mississippi and the North bank of the lower Ohio formed the extremest limit of "the West," even of "the *far* West." On those great rivers—"great as any sea"—the rude barge still competed with the steamboat ; and the commerce that now requires eight hundred of the latter, besides many thousand miles of railroad, was amply supplied by two or three dozen. Indiana and Illinois had just emerged from the territorial condition ; Missouri and Mississippi were knocking at the door of the Union ; Louisiana had but recently been admitted ; Arkansas was barely organized as a Territory, and Texas was yet a province of Mexico. The population of these States and Territories, with that of Ohio, Kentucky, and Tennessee—in other words, of the whole Mississippi Valley—was about two millions ; now it is five or six times that amount. At that time Lexington, in Kentucky, the site of Transylvania University, contained six or eight thousand inhabitants, and was one of the largest inland towns in the Union ; Cincinnati contained about nine thousand ; Louisville and St. Louis each

about four thousand ; while the present capital of Indiana, and many of the great towns and cities in the North and West, and about the lakes, had as yet no existence, even on paper. In fine, that vast wave of emigration, domestic and foreign, had then but just commenced, which has since filled up the entire valley, from North to South, made populous the plains that stretch to the Rocky mountains, and, pausing scarce a moment on the summit of these, poured down their western slopes, to die away among the islands of the Pacific.

Thus, if it was not literally in the wilderness, it was, at least, on the very borders of civilization, that Caldwell came to plant, and did plant, a school of medicine, whose authority, (at least, so long as he was of its Faculty,) was supreme and pervading, and whose alumni, we may add, in intelligence, skill, and achievement, would do honor to any institution in the country. In ascribing, as we do, most of this success to him, we are not unmindful of his co-laborers, some of whom acquired a reputation equal to his own, though different in kind. They, however, had failed repeatedly—some of them failed through thirty years in other and more favorable situations—and therefore to say, that, without his powerful action, his superb administrative talent, their attempt in 1819 would have shared the fate of others before and since, is neither doing more than justice to him nor less than justice to them.

But we have not yet alluded to that portion of his labors which contributed more, perhaps, than anything else, first to create, and then to confirm his influence. During his eighteen years' residence in Lexington, he was constantly writing and publishing on subjects the most various and contradictory. Not a year passed without his committing from fifty to three or four hundred pages to the press. Among the most voluminous and important of these publications, may be mentioned, a volume of *Essays*, in 1821 ; *Outlines of a Course of Lectures on the Institutes of Medicine*, in 1823 ; *Elements of Phrenology*, and *Defence of the Medical Profession against the Charge of Irreligion and Infidelity*, in 1824 ; *Probable Destiny of New Orleans in relation to Health*, and *Analysis of Fever*, in 1825 ; *Medical and Physical Memoirs*, in 1826 ; *Memoirs of Dr. Holley*, in 1828 ; *New Views of Penitentiary Discipline*, *Advantage of a National University*,

Structure and Dependencies of the Science of Medicine, and Changes of Matter and their Causes, in 1829; *Malaria, The Study of the Greek and Latin Language, Original Unity of the Human Race, and Febrile Miasms*, in 1830; *Intemperance, Washington, The Moral Influence of Railroads, and The Means of Preserving Health in Hot Climates*, in 1832; *Physical Education, Gambling, Quarantines and other Sanitary Systems, Optimism, and Phrenology Vindicated*, in 1834; *Popular and Liberal Education, and Hygiene*, in 1836, &c., &c. The essay on Penitentiary Discipline, and that on Physical Education, not only circulated widely at home, but were republished in Great Britain, and translated and printed on the continent. The dissertation on Quarantines won the Boylston prize for 1834, although the committee of award, when they began its perusal, held views in opposition to those of the author. That on Febrile Miasms won the same prize in 1830. In 1828, chiefly through his influence, *The Transylvania Journal of Medicine and the Associate Sciences* was established, and to almost every number of this he contributed either an original or critical paper. Among the most noted of the latter sort, was a review of Jackson's *Principles of Medicine*, which was so sharp and conclusive in its nature, that, according to rumor, the author of the "Principles" endeavored to buy up and cancel the whole edition of that book. We have mentioned but two works on Phrenology, but that is not a tithe of what he wrote and published on that subject. Immediately on his return from Paris, in 1821, he began the promulgation of the doctrines of Gall and Spurzheim; he introduced them into his didactic lectures, taught them to private classes, developed them before literary societies and popular audiences, and pressed them home upon the intelligence of all in the social circle. Wherever they were assailed, and by whomsoever, he advanced to their succor with a heartiness, and will, and vigor, that boded no good to the assailant. He was, in truth, not only the earliest, but also, at all times, the strongest and most redoubtable champion of these doctrines in the Union. And, whatever may be the ultimate fate of phrenology, as a system of mental science—as applied to cerebral physiology and pathology—none will deny the wealth of illustration, and the tremendous power of argument, which Caldwell brought to its support.

Over the remaining events of his life, we shall pass hurriedly, as they are recent and better known. In 1837 he was invited by some of the authorities of Louisville, in Kentucky, to attempt the building up of a College of Medicine in that city. It had for some time been apparent to him, and also to his colleagues, that the rapid growth, and consequent influence of Louisville and Cincinnati, would sadly interfere with the prosperity of the school at Lexington, and a scheme was even entertained of transferring it to the former city, as a more eligible location. From various causes, this scheme was abandoned by several members of the Faculty ; but, nevertheless, Caldwell decided to transfer himself, and to incur alone the hazard of an attempt at Louisville. When he reached that city, he found a state of things not unlike that encountered at Lexington eighteen years before : one attempt to establish a school, had failed; there was no suitable building, nor any fund wherewith to erect and furnish one ; there was great embarrassment in commercial circles, from which alone aid had been looked for ; no Faculty with any experience in teaching, could be selected in Louisville ; and under any and all circumstances, the enterprise would be violently opposed by the institutions of Cincinnati and Lexington. He could easily have retreated from a position so unpromising, a special deputation from one of the Cincinnati schools having visited him, at this period, with the offer of a place, and a *carte blanche* as to his colleagues ; but he promptly declined the offer.

The trustees were thoroughly disheartened, and the most intelligent of the citizens regarded further efforts as futile. Not so, Caldwell, whom the very difficulties seemed to attract. At his request, the two leading members of the Board (James Guthrie, Esq., and the late Judge Kewan) called a general or "mass" meeting of the citizens, to listen to an address from him, on the subject of the proposed school, the means of its establishment, and the benefits to be derived from it, if wisely and judiciously managed. The meeting was a large one, and Caldwell, then approaching his seventieth year, spoke for two hours, with a warmth, an earnestness, and an enthusiasm never exceeded in his earlier days. Resolutions were passed unanimously to the effect, that it was expedient for the Mayor and

City Council to endow the "Medical Institute" with a lot, and to erect a suitable edifice, and further, to advance or appropriate twenty thousand dollars (Caldwell had asked for twenty-five thousand) for the purchase of a library, a museum, and the requisite apparatus. These resolutions, having been laid before City Council, received the sanction of that body, with only one dissenting voice; and thus the initial step in the enterprise was secure and firm. For the rest, Caldwell, having been joined by three of his Lexington colleagues,—Cook, Short, and Yandell,—by Cobb of Cincinnati, by Flint of Boston, and subsequently by Drake and Gross of Cincinnati, labored with the strength and power, the elasticity and vigor of his youth, until he saw the school triumphantly successful, in spite of powerful rivalry abroad, and in the face of the most implacable, and the most unscrupulous opposition, at home. His pen, the while, was as prolific as ever, in essays, lectures, and reviews; he addressed popular audiences, mechanical associations, literary, medical, and educational societies; sent forth new and enlarged editions of former works; experimented and published on mesmerism; and waged fierce and stubborn warfare against the whole brood of chemical and chemico-vital physiologists.

The school opened with eighty pupils. Each succeeding year (save one) the number augmented, until, in 1847, ten years from the commencement, it rose to four hundred and six, constituting by far the largest class that then had ever been assembled in the Mississippi valley, and larger than any that has since been assembled. Early in the latter year, Caldwell formed a resolution to retire from the toils of public and official life, which had engrossed him for a whole generation; and this resolution he made known to some of the trustees, by whom it was approved. He named March, 1850, as the period of his retirement. But the Board anticipated him by declaring his chair vacant in 1849. For this arbitrary and extraordinary proceeding, no motive was assigned, save the rather indefinite one, that "people thought him too old." The real motive was supplied by the desire of a member of the Faculty to possess Caldwell's place, which he was adroit enough to get, although (according to rumor) his colleagues twice refused to recommend him for it, on the ground that they did not think him qualified.

Full details of all this unpleasant business may be found in the Autobiography.

Caldwell made no concealment of his indignation at the conduct of the trustees. As an attempt to degrade him, though utterly powerless, it was to be resented; but it touched him more deeply, in depriving him of an income to which he felt himself justly entitled, and the loss of which, at his age, and in the condition of his affairs, was a source of serious inconvenience. The trustees joined to their dismissal the offer of an honorary or *emeritus* professorship, which he rejected, in words not more proud than they were just and true: "That they had nothing to confer which to him could be honorary; that not only was he the founder and constructor of his own honors, but that he was also virtually the author of all the academical honors possessed by them."

Some months after this, he visited Nashville, in Tennessee, with the design of founding a school of medicine in that city. He asked for a sufficient amount of funds to place the enterprise from the beginning on a level with the older institutions of the country, but from various causes he did not succeed to the extent desired. He predicted, however, on his return, that the interest he had awakened would lead in a twelvemonth to the establishment of a school—a prediction that was verified. In 1850 he was present, by invitation, at the annual meeting of the "American Medical Association," held in Cincinnati; and was requested by that body to draw up a report on Mesmerism, for the next annual meeting, in Charleston, S. C. His health did not permit of his journeying to Charleston, and from his silence, it was supposed that he had not prepared a report. After his decease, however, it was found among his papers, finished, and in perfect order.

From this time forward, he engaged in no public business. Feeling that his years were well-nigh numbered, he occupied himself in the arrangement of his affairs, in the composition of his autobiography, and in those studies which had been his favorites for nearly three score years. To the last he retained an undiminished interest in these—reading with avidity everything that was published, and noting, commenting, criticizing, as of old.

Early in May, 1853, he was seized with erysipelas in one of the lower extremities. This yielded promptly to remedies, but left a state of feebleness that slowly though steadily augmented. From the first he regarded the illness as fatal, expressed himself as content, and calmly, serenely, and hopefully awaited the appointed hour. There was no bitterness, no resentment for anything unpleasant in the past; and whatsoever of seeming harshness or severity the stern exigencies of life and its affairs had forced upon him, gave place now to the inherent kindliness of his nature. There was no impatience even, save when first his weakened muscles refused to obey the mandates of a hitherto imperious will. In the last hours, as we have learned, that which was at once the passion and the business of his life, still ruled his thoughts. His mind was busy in dreams, by day and night, with the themes that had employed it for half a century: he was still in the class-room, developing some recondite point in medical philosophy; in the closet, penning some bold and fearless paper for the public eye; in some fierce debate, where truth was waging its solitary battle against many-handed error. "I must stop," he said, one morning, after a night of unusual restlessness, and as though communing with himself, "I must stop this night-lecturing: it does no good." On a later occasion, after an uneasy sleep, marked by broken and muttered sentences, as the gray dawn dispelled the shadows of his chamber, he seemed to be summoning all his powers for some last and decisive struggle; "I would like," he said, in clear, distinct tones, "I would like to make one more effort! Just let me have another dash at them!" A few hours after this, on the 9th day of June, the strong heart was stilled in death.

Such is a sketch, as brief as we could well make it, of the career of this distinguished man. Even in such bold outline, we think, it will strike the reader as altogether unique, as one to which there is no parallel in the professional annals of this country, and few in those of any country. It is a career, too, eminently consistent in all its parts, and was closed in a manner at once characteristic and logically necessary. Caldwell's last labor was the composition of his Autobiography, and the last day which he spent in his study, was employed in the

revision of the manuscript. As he lived a long life, self-sustaining and self-sufficing, seeking, under all circumstances, his inspiration and his strength from within rather than from without ; so it was right that his own hand, rather than another's, should trace the story of that life. This gives it, to our mind, a sense of roundness, fullness, and completeness. And he has discharged this self-imposed task with singular candor, openness, and frankness. He has laid bare, with no delicate and hesitating pen, all the motives which governed him ; he has spoken of himself with the same freedom precisely with which he speaks of others ; and however much his judgments may differ from those commonly received, we do not entertain a doubt that time will prove their essential truthfulness.

We have endeavored, in the progress of this sketch, to give the reader an idea both of the extent and variety of his authorship ; but we feel that it is a very inadequate one. The mere enumeration of his published writings, by title, occupies eight pages in the Autobiography. At the time of his death, they amounted nearly to thirty octavo volumes. Many of them, it should be observed, were sent forth at his own expense, without the hope or the expectation of reimbursement. They were voluntary contributions, for the support of what he conceived to be right, for the defence or the diffusion of what he conceived to be true. A large portion of them are directly or indirectly of a controversial nature. Caldwell, in point of fact, was a sort of literary Ishmael, not so much from any mere love of controversy (though something there was of that), as from the freedom and boldness, and the wide range of his inquiry. From the beginning to the end of his active life, he was almost constantly engaged in some form of contest, battling for some truth that was struggling its way to the light, or throttling some crested error that for years, or for centuries of years, had wound its way through the fair domains of science. In some of these he was alone ; and, even when he had partisans, the "undaunted metal" that he displayed invariably brought down upon him the very brunt of the battle. No man could desire a fairer or more candid opponent. He avoided no difficulty, he took no side issue, he indulged in no trick or feint of fence,

but going straight at the subject, he maintained the conflict, foot to foot, and front to front, and achieved the success which nearly always attended him by dint of sheer, direct force—a force that went crushing through the stoutest panoply of fact and argument in which an opponent could induce himself. He was, withal, unusually tolerant of criticism. So far from treating it as offensive, or being irritable under it, there was no surer road to his favorable opinion, and to his good graces, than a spirited and courteous examination of what he put forth. Hence, his controversies rarely became personal. If, however, he deemed himself treated discourteously or unjustly, all the Titan forces in him were aroused, and mercy was utterly dismissed. The lightning is not more speedy and more swift, more certain and more sure, or scarcely more destructive, than was he under circumstances of provocation. He rarely sped more than one bolt, for, in truth, there seldom was any object left for a second.

Not less remarkable than the amount of his published writings, is the variety of subjects to which they relate. Besides medicine proper, in its different departments, his ever active pen ranged over physics, belles lettres, the fine arts, ethnology, history, biography, education, psychology, medical jurisprudence, religion, morals, and fiction. It has been imputed to him, indeed, as the constant error of his life, that he frittered away his time and his intellect on too many subjects, often of trivial or of ephemeral importance. Dr. Caldwell himself, on reviewing his career, was not indisposed to acknowledge the justice of this imputation. He could not fail to see, what is doubtless true, that had he concentrated his labors on fewer points, had he bent his fine powers to the investigation and development of one or two subjects, he might have produced some large and learned volume more enduring than any single work he did produce, might have advanced some particular department of science, and thus might have secured for himself a *different* place in the estimation of posterity. But this seems to us a very partial view of the matter. What he thus lost in one direction, certainly he gained in another, or in several others; and what science thus lost in some of its subdivisions, was more than compensated for by its gain as a whole. The comprehen-

sive character of his learning, was one of the secrets, and one of the great secrets, of his success in the West,—was the means by which the interests of knowledge, as well as his individual interests, were best subserved. In this light, his whole life in Philadelphia may be regarded as a period of special training for the sphere of action opened to him beyond the Alleghanies. In the educational wants of the population gathered and gathering there, his manysidedness had both employment and breathing space. He found there, as he aptly says, an intellectual soil, in many respects virgin and fresh,—an intellect infinitely diversified, rich in its capacities, and full of untrained vigor and of dormant or untutored energies. To arrest and to direct and fix its attention, to rouse its slumbering activities, to wake it up to its true interests, to mould it, to stimulate and quicken it in all its varieties, it needed to be addressed in many modes; it needed a man of varied and profound culture, ready with the pen, prompt of speech, strenuous and sustained in action ; and such a man precisely was Dr. Caldwell. He had no leisure for compiling learned treatises, or for torturing nature into the disclosure of some cherished secret. The time which might have been thus employed, was spent in exciting a love of letters, and in diffusing knowledge, among a large people, in building up institutions that shed the light of learning over great States. Prepared by the mere wealth, the multitude, of his resources, for all occasions, whether offered or sought, he soon made his name familiar in every household in all the West, and for a whole generation wielded an influence such as no man else wielded, such as he left none behind him to wield. Out of other men's defeat, he wrung the most splendid success ; into the dead fragments of their failures, he poured the blood and breathed the breath of a new life. If he had been appointed to a professorship in the Philadelphia school, as certainly he deserved to be, no doubt he would have come down to us, and have gone down to posterity, in some form of heavy and voluminous remainder, the delight of the medical ancient, and the terror of the medical youngling ;—but to subsist thus, and thus only, is quite as much “a fallacy in duration,” as “to subsist in bones, and be but pyramidally extant,” was in the view of old Sir Thomas Browne. Instead of this, and better than this, he

enjoyed, while living, a consideration such as is accorded to few ; and, dying, left a name linked indissolubly with some of the highest and noblest interests of humanity, in the great central valley of this continent.

Of course, it will be anticipated that one who has written so much, and touched such a variety of topics, has not always written with equal excellence. Yet Caldwell's uniformity in this respect is very surprising. Such was the completeness of his knowledge, and such the precision and accuracy of his intellectual operations, that he rarely failed to do justice to himself and to his subject. Hence, his general excellence, especially in the matter of solid and vigorous thought, will compare favorably with that of any writer in the country. A great many of his productions are very models of their kind, both in conception and in execution. Much that he wrote on epidemic diseases, on hygiene, on sanitary establishments, on education and moral reform, much, too, that he taught for forty years on these and kindred subjects, has become, as it were, a common property. Other matters that engaged his pen were purely theoretical, and have lost much of their interest, except as they mark a phase of the profession ; but they were of use in their day, as contributing largely to correct thinking, and that, we need hardly add, is a very vast step, and a very indispensable one, towards correct knowledge. Many of his smaller papers relate to subjects that seem to us now of little import ; but it should be recollect ed that these grew out of the necessities of his position ; they were addressed to some particular end, or were intended to subserve some special purpose, and in this they rarely failed. Caldwell had, moreover, the rare faculty of seizing on the underlying relations of even the most trivial subject—on the philosophy that lurked within it, and so could bring it home to the hearts and heads of all. His style is peculiar, especially in the frequent and half-colloquial use of certain connective or transitional words and phrases. It possesses the qualities of fulness, breadth, and copiousness, in a degree that to many makes it seem cumbrous ; but certainly it was anything else. It is always scholarly and correct, is ever characterized by great strength and force, and is almost unequalled in its perspicuity. He *may* have written, now and then, a feeble sen-

tence, but it is almost certain that he never wrote one whose meaning is not open and plain to the commonest understanding. His conceptions seemed ever distinct, definite, and precise, and to mould or clothe themselves in the clearest and most transparent language.

As a teacher, Caldwell was at all times popular, and ranked deservedly among the most eminent. Thirty years of uninterrupted service, in schools of his own creation, may very well attest his attractiveness. In the power of exciting in his pupils an enthusiasm for their studies, he has had no superior and few equals among medical lecturers. There are hundreds of noble and accomplished gentlemen in the Mississippi valley, who will trace to his teaching, and to his personal influence, their first impulse to scientific cultivation, and their determination to excel in it. Always full of his subject, he was yet complete master of it; in his manner, he was perfectly self-possessed and easy; and in delivery, earnest, impressive, generally elevated, and occasionally in the highest degree eloquent. His voice, though not strong, was well managed; and what it lacked in strength was supplied by unrivalled distinctness of utterance. Without any apparent effort on his part, every vowel was sounded, every consonant articulated, and every syllable clearly pronounced.

As a public lecturer and orator, Caldwell possessed unusual personal advantages. There have been few men of a more distinguished and commanding presence. He was much above the common height, well formed, and, to the last, perfectly erect, with a large and finely-developed head, and a countenance full of dignity, and wonderfully intelligent, animated, and intrepid. In midlife, he had that amount of fulness indicative of healthy and vigorous nutrition; in old age, he was somewhat thinner, but still retained an air of singular strength, endurance, and hardiness. At all periods, his form, expression, and movement, would have attracted attention in any assemblage of men in the world. The portrait, after Lambdin, prefixed to the *Autobiography*, though like, is yet not on the whole the best likeness. The intellectual air of the head and face, and the shape of the former, are finely given, but the latter is too grave and calm—it lacks a certain vigilance in the

lines, as well as the keen and arrowy outlook of the eyes ; while the flowing beard, worn by Caldwell in his latter years, though unquestionably becoming, conceals, in some degree, the world of massive power and iron determination expressed in the strength and contour of the lower jaw. There is an engraving, from a portrait taken by the same artist some years earlier, which seems to us truer to life—every feature is awake, and the whole countenance is literally blazing with intelligence. All this wealth of person was heightened by a refined and admirable taste in dress, and by a manner at once polished, elegant, frank, and full of noble and knightly courtesy. This manner was not donned and doffed at pleasure ; it was constant, invariable ; it was part and parcel of the man, as much so as his head or his hands, and was employed towards all with whom he held intercourse, from prince to peasant. Even his anger, when aroused, vented itself in courtly forms and phrases, and was none the less to be deprecated on that account.

Politics, that treacherous sea, wherein is swallowed up so much of the intellectual riches of the profession, never had much attraction for Caldwell. The low trick, the petty artifice, the mean arts, the shameless impositions, which seem to form the conditions precedent and necessary to political success, were abhorrent, as well as foreign, to his whole nature. Whatsoever he did, must be done openly, and be seen of all men ; whatsoever he thought, that must he utter, if he uttered anything. To flatter where he could not persuade, to profess what he did not believe, to repress an utterance, because it might lose him a supporter, to stifle an honest conviction, because it might be opposed to the popular sentiment or belief—these were things that never entered into his imagination. The war of 1812 enlisted all his feelings, and in Philadelphia, where he then resided, he was active in behalf of the party pledged to its support ; but, after his removal to the West, though he retained his interest in party and political movements, he took no personal share in them. He may be said to have belonged to the conservative rather than the opposite school ; yet he was not unreasonably wedded to that school ; for he was as far removed from blind adhesion to established forms, on the one hand, as he was from wild radicalism on the

other. That which he cherished beyond all else, which he held high above all price, was the Federal Union ; a sentiment that looked towards its disruption was, in his view, treason, and deserved the swiftest punishment of treason. He would as soon have raised his hand against the law which binds together the spheres, as against that which binds together these States. These, in truth, were to him as so many stars, moving in distinct and separate orbits, each giving light and glory to the other, whilst over all—combining, coördinating, and governing all—is the Constitution, the Union, like the great law of God. For his strong feelings on this subject, there were several causes :—His father was a stern, unflinching patriot, when as yet patriots were none too many, and was a member of that celebrated Mecklenburg convention, which made the first, and perhaps the original, Declaration of Independence ; his elder brother led sixty of the expertest riflemen of the South into one of the most brilliant partisan conflicts of that region ; he himself was cradled, as it were, by the agitations of the Revolution; he grew up amongst the early actors in that heroic struggle ; he mingled at a later period on terms of friendship and intimacy with many of the great men who fashioned and moulded the government; and who guided it in its infancy, and he was imbued with the wise and liberal spirit of these. Thus pride of family, the lessons of his youth, the associations of maturer age, and his own best and most solemn reflections, all combined to produce an intense love of country.

Although we have stated truly, that Caldwell's controversies rarely degenerated into personal quarrels and enmities, it must not therefore be supposed, that he escaped the penalty of detraction to which exalted talent and independent bearing are everywhere subjected. In his case, all minor charges were combined or included in the general one of infidelity, or irreligion, or—to use the most modern phrase—the want of a sincere religious faith. The facility with which such a charge is made, and its frequency, relieve it of nearly all the force it might otherwise have. There have been few eminent persons—especially in the medical profession—against whom it has not been brought. It is the common trick of envy which is feeble, of malice which is impotent, of hate which is baffled,

but inextinguishable. It is so easy for one to be pious, when he cannot be anything else, and so easy to signalize this affected piety by a jealous zeal for the interests of religion or of the Church, by exciting against some person or thing the odium of a powerful and numerous body of churchmen, and the suspicion of all correct-thinking men everywhere. Caldwell, for forty years, labored under this charge, and for forty years treated it with contemptuous silence—in which we should certainly imitate him had it not been renewed since his death, and repeated with a pertinacity beyond all previous example. It dates, we believe, from the appearance of his review of President Smith's Essay on the Causes of the Variety of Complexion and Figure of the Human Species. We have already alluded to this. Dr. Smith was a learned theologian, an eloquent and popular divine, a very accomplished scholar and man of letters, and the master of a style which places him, in the opinion of our great lexicographer, among the best models of composition in the language. The essay added much to his reputation abroad, as well as at home ; and having reached its second edition unopposed or uncontroverted, it had come to be regarded as unanswerable. Caldwell's review was a severe one—not so much from its language as from its crushing truth. It showed that many of Dr. Smith's facts were not facts, and that, from such of the premises as were sound, his deductions were unscientific. No reply was made to it, save by denouncing the author, publicly and privately, as an infidel, and thus exciting against him the prejudices of the whole religious community. The accusation was caught up by those who wished to keep him out of the Medical Faculty of the University, and was used by them for that purpose. He was even charged with being instrumental in causing Dr. Smith's death. That gentleman, about this period, had several attacks of paralysis, from which he never recovered, and these were attributed, by his intimate friends, to the excitement occasioned by the severity of the review of his essay.

The charge of irreligion was revived when Caldwell became the advocate of phrenology, and also at a later period, in connection with his publications on mesmerism, and indeed at all times when it was wished to injure him in reputation, or to

thwart him in his schemes. It possibly derived some color from the fact, which he never concealed, that he had been educated for the ministry. Beyond this, there was no warrant for it. Neither in his speech, nor in his writings, was there anything to justify it. Caldwell himself indulged in no levity on sacred subjects, nor did he listen to it from others. There is not a line from him which can be construed into a meaning hostile to religion ; so far from this, he, on all proper occasions, inculcates the utmost reverence for the sacred Scriptures, and constantly recommended to the pupils under his charge close and earnest study of them. Besides all this, we have his own declaration, and the testimony of a member of his family. Miss Warner, in the appendix to the Autobiography, says : "Dr. Caldwell's faith in the fundamental and essential doctrines of the Christian religion was firm, and exercised a salutary influence on his life and actions. A year or more before his death, he made to a personal friend (a clergyman in the Episcopal Church) an explicit declaration of his belief, which was satisfactory to that gentleman. A few months previous to his last illness, he gave a like assurance to his immediate friends ; and, on his dying bed, this assurance was repeated." Let, therefore, the miserable calumny rest ; or, if revived, only for the disgrace of him who shall utter it.

We have said nothing yet of the medical doctrines taught by Caldwell, through the press, and from the professorial chair, for the better part of half a century. To do so, would greatly exceed limits upon which we fear that we have already trespassed. We may observe, however, that he was a *solidist* and *vitalist* of the straitest sect. He did not deny morbid conditions to the fluids of the body, but he insisted that they are always, and of necessity, secondary and subordinate to diseased states of the solids. Sympathy played a large part in his physiological and pathological teachings. With the doctrines of vital chemistry, as it is called, he had no patience whatever. He could not brook that which, to use his own words, "identifies man in function with a German stove, or a Belgian beer-barrel." He would listen to no compromise—no mixture of chemical and vital laws ; if there was anything that he detested more than *chemical* physiology, it was *chemico-vital* physiology.

Between the laboratory of the chemist, and that of the living human body, there was for him the deep gulf that separates death from life. The position which he held on this point, subjected him to much unmerited reproach in his latter years. He was represented as clinging to the idols of the past, and struggling in vain against the progress of science,—as sleeping while the great stream of discovery swept unheeded by. Nothing could be less true of him. No man watched with keener interest the dawn of discoveries, or looked more hopefully and trustfully for them to the future. And in one respect he set a rare example: whatever came forward with pretensions to science, he was ever ready to examine, and did examine. For the past, simply as the past, he cared nothing. The antiquity of error gained no leniency for it at his hands; on the contrary, it but served to increase his rigor. His opposition to some of the modern physiological doctrines, sprung from a profound conviction that they lack truth, and that their reception as true, will be fraught with injury and disaster. Such is the lesson that history and reason taught him—and such is the lesson that they teach to many others. One of the best known among the living medical teachers and writers of this country, propounded to us, not long since, the following question: "Suppose chemistry, in its application to physiology, pathology, and therapeutics, to stop where it now is; how long will it take to free medicine from the errors already introduced by it?" The question has both meaning and matter, and we leave the reader to consider it.

A Case of Paracentesis Abdominis for Ovarian Dropsy, followed by Hæmorrhage, and Death in Seventeen Hours. By E. R. PEASLEE, A.M., M.D., &c.

Mrs. ——, aged 41, first noticed a tumor in the left iliac region, between three and four years since, and which had gradually increased up to the present month (February, 1856), with slight fluctuations in size. It had, from the first, been regarded as ovarian; and had presented the phenomena usually attendant upon such developments.

I first saw the patient in May, 1855; she wishing to obtain my opinion in regard to the propriety of an operation for the removal of the tumor by the large abdominal section. I found the circumference of the abdomen to be forty-seven inches; and the walls of the latter so tense that I was unable to decide whether the mass consisted of many or of very few distinct sacs. The patient was, however, in so low a condition generally, that I did not for a moment entertain the idea of an operation for the removal of the tumor, and gave my opinion accordingly. Indeed I did not consider it probable that she would continue through the warm season, then just commencing.

I did not again see her till the 23d of last month (January, 1856); when I was again requested by the patient to remove the ovarian disease. I found, to my surprise, that she had very much improved in her general condition since May, 1855, (though she had failed during the past Summer,) and though the tumor had risen somewhat higher in the epigastrium, her circumference was still but forty-eight inches. She had a pretty good appetite, and though respiration was somewhat hurried, there was no dyspnoea while she was sitting or lying quiet. The bowels were easily kept in a regular condition by appropriate diet; and the action of the kidneys was rather free for a case of this kind. I did not, however, advise the patient to risk the operation of ovariotomy; though, to her inquiry whether she was apparently in as good a general condition as the two persons on whom I had before operated successfully, I was obliged to reply in the affirmative. I told her, however, that it was impossible to ascertain with any degree of certainty whether the mass was adherent or not to the abdominal walls or contents, without previously evacuating the sacs by tapping to such an extent as to enable me freely to move the mass in the abdominal cavity, provided it were not adherent. That in fact I could not express any opinion in favor of ovariotomy, without previously tapping her; and if, on doing this, I found the mass extensively adherent—or if I could not decide that it was not adherent, from not being able to evacuate the sacs sufficiently, or from any other cause,—I should then not at all entertain the idea of an operation for the removal of the mass. I did not advise the tapping even; since, though I regard this

operation as hardly dangerous in any degree, I informed her that I might perhaps find the mass made up of very many small sacs, and without a single large one, and in that case she would be disappointed, and I should not arrive at any positive result as to the adhesion or non-adhesion of the tumor.

The patient had a decided aversion to being tapped, unless she could feel quite sure that ovariotomy would follow; since a sister who had been tapped for the same disease, a few years since, died a week afterwards of peritonitis; and because, also, she had the impression that if once tapped, a repetition of this operation would be frequently necessary. I could, however, not give the least assurance that the more formidable operation would follow the tapping; but I engaged, if she and her friends on reflection so decided, to evacuate the sac so far as to ascertain, if possible, the condition of the mass, and *then* decide whether to perform the operation of ovariotomy or not.

After a deliberation of five days on the subject, the patient again sent for me, and informed me she had decided to be tapped, as preliminary to the decision of the question whether I would perform the operation of ovariotomy or not; and the 4th of the present month was appointed for that purpose.

I found the patient in good condition for the operation; and, assisted by Dr. Ranney, I performed the operation in the usual way, the patient sitting in an easy chair, and the trocar being introduced through the linea alba, at the point midway between the pubes and the umbilicus. Neither the previous history of the case, nor examination through the tense abdominal walls, afforded any definite answer to the question whether the mass consisted of many small sacs or not; and no fluctuation could be detected *per vaginam* or *per rectum*. Fluctuation, however, indicated the existence of a distinct sac, of considerable dimensions, in and below the umbilical region, and another considerably higher up; the former was at once reached by the trocar.

The sac first evacuated contained about six pints of the clear and highly gelatinous fluid (to the sense of touch), so common in such cases; and on partially withdrawing the canula, two pints more of a milky fluid were withdrawn, evidently from another sac, which had been traversed by the

instrument, while on its way to the larger one. Nothing unusual occurred to indicate anything peculiar, except that, when the second sac had been evacuated, and the canula was almost withdrawn, in order to change its direction, and to penetrate another sac, when a few drops of venous blood were seen to trickle through the canula. This, I supposed, proceeded from a minute vessel on the interior of the sac, which I had punctured, as I had seen the same thing before. Several sacs were next punctured in succession; but they all proved to be small, and afforded very unsatisfactory results, and on withdrawing the canula, as before, a few drops of venous blood again appeared. Fearing this might possibly escape through the puncture in the sac into the cavity of the peritoneum, after I should entirely withdraw the canula, I waited till the dropping entirely ceased, and then withdrew it. I then introduced a *curved* trocar and canula through the same opening in the abdominal walls, and with this reached and evacuated some sacs at a greater distance from the opening. The larger ones being, however, emptied, the whole remaining mass seemed to consist of an agglomeration of small cysts, and to produce much further diminution of the size of the tumor, by tapping, was seen to be impossible, though the removal of the fluid which had been obtained had only slightly reduced the size of the abdomen. Further attempts were therefore rendered useless; and the same precautions were again instituted, in the final withdrawal of the canula. At this time, more blood flowed through the canula than before, as if it had accumulated to a slight extent in the sac first punctured; but I waited till all oozing had ceased. Fifteen pounds only of fluid had been obtained, this being only about one-fourth of the whole.

The patient was fatigued by the prolonged efforts to evacuate the sacs (six or seven having been reached), and depressed in mind, from the fact that the operation must fail to demonstrate the condition of the tumor, as to whether it were adherent or not, but with the exception of some faintness on being put into bed, and some sickness of the stomach, nothing worthy of mention occurred. I left her at the end of an hour or more, seeing nothing unusual in her condition. I, however, stated to her physician, that I felt uneasy in regard to that

slight oozing of blood, lest the latter might first fill the sac, and then escape, should that bleeding continue, into the peritoneal cavity ; or lest it might exhaust the patient before the sac should be filled. We both, however, concluded that, on the whole, this was very improbable, and I engaged to see her the next morning, and deemed it injudicious to tell her distinctly, in her fatigued and exhausted state, that I could do nothing more. After the operation, I thought the tumor could be slightly moved across below the umbilicus, but not at all at the upper part, especially in the right hypochondrium ; but I stated that I could not decide definitely enough to form any opinion favorable to the operation of ovariotomy, and that idea was therefore abandoned.

The next morning, at ten o'clock, I was requested to see the patient in haste, as she seemed to be sinking ; and before I could arrive, she was dead. She had passed a tolerably comfortable night, with sickness at the stomach at times, but presented no grave symptoms, as I was informed by her physician, till eight o'clock in the morning, when her expression changed, and she became very restless, and expired before ten.

Post mortem examination at 4 P. M. ($6\frac{1}{2}$ hours post mortem). Present, Drs. Ranney, Barker, and Conant ; and Drs. Mason and Frost, medical attendants. Some bloody serum had escaped from the puncture through the abdominal walls. On cutting through the latter on the median line, a thick and very vascular membrane was found intervening between the parietal peritoneum and the ovarian mass ; and a layer of bloody serum was seen between this and the mass itself, one to two inches deep. This very vascular membrane was found to cover over the whole tumor, anteriorly and laterally, like an apron ; it being also adherent to the tumor on both sides, as well as to the pelvis and the lower portion of the tumor also. On further examination, the membrane just mentioned was found to be the *omentum majus*, and the hemorrhage had proceeded from a small vein in that, which had been punctured in penetrating it to reach the first sac. It had become so thick and firm, as well as vascular, by the constant pressure and motions of the tumor, that I had mistaken it for the wall of the sac first punctured ; and the blood which I had, during the operation, supposed to

flow from the inner wall of the sac into its cavity, had really flowed from the membrane just mentioned, into the cavity formed by the adhesions before specified, between itself and the diseased mass. But very little bloody serum had escaped into the cavity of the peritoneum, through the puncture in the omentum; and it was judged that not more than eight to ten ounces of blood had been lost in all.

The tumor was found to be extensively adherent at its upper and lateral portion; but below the umbilicus it was much less so. Its removal would not have been attempted during life, had it been exposed to view for that purpose, by any judicious surgeon. It was found to consist of an immense number of small sacs, and weighed forty-five pounds—making 60 pounds in all, before the operation of paracentesis. The tumor was found to be mostly developed from the left ovary; and both Fallopian tubes were closed up, and distended with a putty-like substance, in which broken up epithelial cells predominate. It may be proper here to remark, that though a married lady for several years past, she had never been pregnant; the menstruation had been regular till within the past eighteen months.

Remarks. 1. I suppose the haemorrhage alluded to, must be regarded as the "causa sine qua non" of death, in this case. That is, had no haemorrhage occurred, death might not have taken place in any immediate connection with the operation. On the other hand, however, the haemorrhage alone hardly accounts for the fatal result so soon after the operation. A quantity of blood between the omentum and the tumor, with a small amount also in the peritoneal cavity, must have produced an amount of mischief in a few days, which would very likely have proved fatal; but in accounting for a death occurring but sixteen and one-half hours after the operation, and when the amount of blood lost was so small, we should doubtless also take into consideration the exhaustion from the operation; and especially also the mental shock produced by the knowledge that the operation had led to no positive result in diagnosis, and that therefore nothing further would be done.

2. But the *source* of the haemorrhage was, so far as I am aware, *peculiar*. Branches of the internal epigastric artery have

sometimes been wounded ; the bladder has been wounded ; the uterus, happening to lie in front of the tumor, has also been punctured ; and one of the Fallopian tubes, also happening to be stretched over it in front, has been transfixed. But I have never heard of the great omentum being injured in a case of ovarian dropsy, by a puncture at the point usually regarded as the safest, *i. e.*, half way between the pubes and the umbilicus. Indeed, in all ordinary circumstances, where the abdomen is largely distended, it is impossible that the omentum should extend to this point. In the first place, it is not long enough naturally, to extend even to the umbilicus in a case like this—even though it originally fell into the pelvis. And secondly, it is uniformly, so far as I have seen, pushed up by the tumor during its developement, from below, and is generally found somewhat folded, and not reaching more than half the distance from the stomach to the umbilicus. In this case, the omentum was not less than two and one-half feet long, as the specimen will show, since it completely covered the tumor anteriorly and laterally. And since, had it been free at its lower extremity at the time the tumor first began to grow, the latter would doubtless have merely lifted it up, as is usual, I am compelled to believe that the omentum had become adherent to some portion of the pelvic peritoneum before the tumor began to be developed. Thus the tumor grew upwards behind the omentum, and thus the latter became expanded over the whole length of the tumor, as has been described.

Finally, the whole extent of the omentum was equally vascular ; and had the puncture been made at any other point, there is no reason for believing that the haemorrhage would have been less than that which actually occurred.

PROCEEDINGS OF SOCIETIES.**NEW YORK PATHOLOGICAL SOCIETY.**

Reported for the *MONTHLY* by E. LEE JONES, M. D., Secretary.

Feb. 27. *Dr. Finnell* presented a stomach, and a portion of integument, removed from a man who had died of scurvy. The man was one of a crew of 20, manning a ship which sailed from Gibraltar to New York, where she arrived after a passage of six months. When one month distant from Gibraltar, all the crew were taken sick, vomiting blood at intervals, and rapidly sinking. Five died from exhaustion, apparently, from loss of blood. After arrival here, the survivors took board in Cherry street, where, shortly after, three died. Upon the stomach can be seen ulcers, varying in size from two or three lines to half an inch in diameter. This portion of integument shows the character of the external ulcers, which appeared on other parts of the body as well as upon the leg, from which this specimen was removed.

Dr. Finnell also presented a stomach and a portion of a liver, from a person who had died from the effects of strychnine. No morbid appearance can be discovered in the stomach, excepting some marks of irritation at its large end. Upon the portion of liver is seen a cicatrix.

Dr. Dallon inquired if there was any history to account for the cicatrix, inasmuch as he had seen similar marks upon the liver of persons who had syphilis.

Dr. Finnell had no history of the case.

With the above mentioned specimens, *Dr. Finnell* presented the uterus from a female upon whom abortion had been produced. The woman came into the hospital on the 7th of January, suffering from rheumatism, and also severe inflammation of one eye, which finally was destroyed. She came under his notice on the 1st of February. A day or two previous to death, which occurred on the 20th of February, from puerperal fever, she stated that abortion had been produced upon her by a doctor in Essex street, by introducing and stirring about a steel instrument. The operation was followed immediately by considerable haemorrhage, and the next day by expulsion of foetus. In a few days she was up and about, but in a week or ten days was obliged to give up, and so entered the hospital. Upon the sacrum and other prominences of the body, ulcerations were produced, the bone becoming denuded at the sacral ulceration. Post mortem

examination failed to find any lesion of the various viscera, and no phlebitis. There is a small cyst in the cervix, which is the only morbid appearance in the uterus.

After presenting this specimen, *Dr. Finnell* showed a portion of the trachea of a boy, four years of age, who died of membranous croup. The boy suffered a catarrh for two days, without exciting any alarm. On the third day, *Dr. Finnell* was called to see him, and found him failing very fast. No response being made to the usual remedies, it was decided that tracheotomy only could save the child, which, after a delay of two hours, awaiting the consent of the parents, was performed. At this time the boy had ceased breathing, but in a short time after perforation was effected, respiration commenced, the patient rallied, and everything promised well. Towards midnight, however, he grew weaker, and in a short time, died from suffocation. In this part, about midway the cricoid cartilage, it will be seen, the canal of the air-passage, is entirely closed by false membrane.

Dr. Finnell also presented two specimens of the liver, and one of the kidney, from a man who had died of ascites. The kidney was of abnormal shape. Besides these, he exhibited ninety-five gall stones, as curiosities, from a patient who died of pericarditis. The total number found in the gall bladder was 103.

Dr. Pointer presented the pelvic organs of a man exhibiting urinary fistulae, resulting from injury, accompanied with the following history:

Henry S———, an Englishman, 35 years old, was admitted to Bellevue Hospital on the 12th of January, 1856.

No hereditary predispositions could be traced, on questioning this man, who had been very intemperate till ten months ago, when he was compelled to give up his old habits. Twelve years ago he had gonorrhea, but had no stricture. No other history of venereal disease in any form. Two and a half years ago, at New Orleans, he fell astride the hatchway of a ship, wounding the scrotum and right testicle. He was insensible for six hours subsequent to the injury, and when his consciousness returned was unable to urinate, though there was great tenesmus. It was found impossible to pass a catheter, and he was left to pass a terrible night, during which he noticed a swelling, beginning at the pubes and gradually travelling up to the anterior superior spinal process of the ilium, and distinctly confined to the right side. The next day, at 12 M., the infiltrated tissue was lanced in two places, one just above Poupart's ligament, about one-third of the distance from the crest of the pubes to the anterior superior spinal process of the ilium, and the other about one-half

an inch below it, vertically. After nine days he passed his water in a stream, through the upper wound, only a few drops passing per urethram. At the end of two months he could walk about, the quantity of urine passed through the natural passages had increased daily, and at this time he passed about half through the fistula, and half through the urethra. The wound in the scrotum had only partially healed. For six months this condition of things remained, the man having no pain, except at the neck of the bladder, when he urinated. He commenced work two months before, and continued his laborious occupation till three months previous to his admission. He has always noticed some pus in his urine, and a very slight discharge from the fistula. Ten months ago he first noticed a dry cough and night sweats, the beginning of phthisis, which has steadily progressed. About this time the urine ceased to pass through the artificial opening, and while at stool passed per rectum, excoriating the parts, and giving a urinous smell to his stools. When standing up, the opening into the rectum was closed, in some manner, so that none of his water passed into it, but all through the urethra. After several months the fistula reopened, and simultaneously there was an absence of urine in the faeces. About the first of September, 1855, it again ceased to pass through the former opening, and reappeared in the faeces, a little passing at each stool up to the present time, and nothing being discharged from the fistula except a very small quantity of pus.

He came to the hospital to be treated for his chest disease, and with the hopes of recovery usual to phthisical patients. On physical examination, every evidence of tuberculous cavities was found at the apices of both lungs. He was extremely emaciated, and very feeble. Heart's sounds were natural.

Just above Poupart's ligament, and about its middle, was a round opening in the skin, which, on examination, was found to communicate with a fistula running downward and inward to the median line just above, apparently terminating in a blind pouch above the symphysis pubis. The probe was also passed in the opposite direction for a short distance, and then stopped abruptly. There was another opening in the integument, vertically below this, which communicated with a fistula, ending at the anterior border of the tendon of the adductor longus muscle. Besides these, there were two others in the scrotum, which could be probed a distance of one inch only.

January 15th, three days after admission, his urine again passed through the fistula, and he continued to pass at least half of it thus, up to the time of his death, the other half passing through the ure-

thra, in a spiral stream, at times thick with pus. He also passed a little urine through the rectum when at stool, the whole time. I attempted to pass a bougie, but could not introduce it farther than the triangular ligament, with the gentle force used. He informed me that many attempts to pass instruments, had been made in vain. His urinary disease had long ceased to give him any trouble, and his lungs being irremediably diseased, no treatment was addressed to it beyond cleanliness. He was given cod liver oil, and vegetable and mineral tonics, but gradually sank, and died on the 16th of February.

On post mortem examination, a flexible catheter, No. 8, was passed into the upper fistula, above Poupart's ligament, and internal to the external iliac artery, downward in front of the peritoneal covering of the bladder, gradually passing from the side of the organ to its posterior surface, till it met with an obstacle in the region of the prostate gland. This fistula being opened with a scalpel, was found to be lined with a membrane approaching mucous membrane in its character. On cutting down upon the end of the instrument, the fistula was traced into an abscess, seated partly in the substance of the prostate gland, and between it and the rectum, containing about one-half of an ounce of pus. From this abscess, a communication was established with the bladder, through the floor of the urethra. There was also a communication by a valvular opening with the rectum, a short distance from the anus, just above the sphincter ani muscle. None of the other fistulas communicated with the bladder. They were all lined with the same imperfect mucous membrane. The fistula communicating with the abscess in the prostate gland, divided near the opening in the integument, into three smaller ones, which emptied into the sinus before described, and which was large enough to admit the little finger.

The bladder was considerably thickened, and presented evidences of inflammation. Its whole mucous surface was dotted over with perfectly circular ulcers, about three lines in diameter, some of which presented the appearance of healing, while others were ragged and apparently progressive. They resembled very much chancres, so that several medical gentleman who examined them, remarked that they would have pronounced them chancres unhesitatingly if situated on the external surface of the body.

Dr. George T. Elliot presented a specimen of *aneurism of the aorta*, with the following history :

John Kelly, aged twenty eight, unmarried, native of Ireland, a shoemaker, admitted June 25th, 1855.

No hereditary tendencies to disease traceable ; a man of intemperate habits ; suffered from syphilis in primary and secondary forms ; never had rheumatism ; lost the use of one eye, and partly that of the other, from inflammation contracted by exposure at a fire ; health generally good.

In March, 1855, exhibited symptoms of some inflammation about the chest ; pain (but) on the right side ; expectoration slight, yellowish, and viscid. Previous to this attack, never suffered from palpitation of the heart, but since has been greatly troubled in this way. Unable to walk any distance, or up stairs, without stopping to rest. Has not felt pain in precordial region ; is not conscious of having ever injured himself by exertion.

At his admission, June 25, had lost much flesh, was greatly oppressed at times by palpitations, but felt no pain ; legs were œdematosus to the knee ; urine not albuminous ; pulse was then 90, regular, locomotive, visible in neck ; respiration 24 ; during August, suffered somewhat from precordial pains.

October 1st—Apex of heart, found in sixth interspace, one and a half inches to left of nipple ; double murmur at base, and at apex, or transmitted ; thrill over base ; radial pulsations visible ; entire of lower limbs œdematosus, with some effusion into abdomen ; liver prominent in epigastric region. At this time, suffered greatly from dyspœa, and œdema of lungs was discovered.

During November and December, occasional attacks of dyspœa came on, with general derangement of digestive function ; food was often rejected by the stomach.

January 6th—Sudden excruciating pains in the precordial region during the past night caused him to rise from bed, in his endeavors to obtain relief ; point of heart's beat indeterminate ; double murmur, as before, over base, and a distinct thrill in the third interspace, two inches to left of median line ; dulness extends from second rib downwards, and from right margin of sternum to three inches to the left of the nipple.

Fluctuation, but no very great distension of abdomen ; œdema of right lung ; bronchial breathing in left ; face assuming a dark purplish hue.

February 23—Has been suffering with increasing dyspœa for several days ; maintains a sitting posture in bed ; face greatly suffused ; jugular veins, and others of neck, exceedingly distended.

February 24th, at nine A. M., suddenly died, immediately after eating a light breakfast.

Sectio cadaveris, twenty-four hours after death. *Rigor mortis*—Face and neck much swollen and discolored; considerable distension of abdomen, and great oedema of legs.

Thorax—Lungs everywhere firmly adherent to the pleura costales, the pericardium, and diaphragm, excepting as separated on left side by a slight amount of serum. Several ounces of serum were found confined between the middle and lower lobes of right lung, and the lower lobe was carnified.

The left lung was compressed posteriorly by the enlarged pericardial sac, but otherwise healthy.

The pericardium was found thickened and greatly enlarged, its cavity containing over twenty ounces of serum.

The heart greatly hypertrophied, weight twenty-two ounces. Its valves all healthy, to inspection. The aortic, however, were found not to hold water.

The liver was comparatively small, presenting marks of inflammation upon its surface.

Kidneys of normal size, and healthy.

Brain not examined.

Dr. Elliot thought the case exhibited a point of fallacy, on account of the peculiar situation of the aneurism, but spoke in high terms of Dr. Camman's diagnosis, it having coincided with the facts in the ease, as demonstrated by the autopsy.

Dr. O'Rourke thought there was no point of fallacy in the case, and that Dr. Camman's diagnosis was correct.

Dr. Elliot said he intended to give Dr. Camman full credit, and that he wished to convey the idea that the peculiarity of the case might lead to a mistake in the hands of the less experienced.

Dr. S. C. Foster inquired as to the dates in the history of the case.

Dr. O'Rourke remarked that the first symptoms appeared in March, 1855, and that Dr. Camman made his diagnosis in the following June.

Dr. Pointer said the patient was received into the hospital with "dilatation of the aorta" as the diagnosis.

Dr. Dalton presented a fatty tumor, as interesting in exhibiting how dense a tumor of that character may become by the incorporation of fibrous tissue. The tumor was removed by Dr. Detmold from the back of the neck of a perfectly healthy boy, aged nine years. It made its appearance ten months since, and gradually increased until it attained the size of a goose egg. It was adherent to the trans-

verse processes of two of the vertebrae, lobulated, presenting to the touch a sensation as if bone was developed in its centre. It was mostly superficial, the skin being in no wise discolored. It was not painful, and was removed on account of its inconvenience.

Dr. Metcalf asked if it was not uncommon for tumors of that kind to be attached to bone. He thought there were but few, if any, who would not have considered the tumor to be schirrus.

Dr. Metcalfe presented a specimen of chylous urine.

A young lady, aged twenty-six, native of Cuba, unmarried, of nervous temperament, having previously enjoyed good health, began to be dyspeptic three years ago. From time to time, pain in the lumbar region was complained of, and on several occasions she passed bloody urine.

Two years ago, for a short time, she had been troubled with swelled feet. No disturbance of the menstrual function, except that the catamenia had come on three or four days later than the regular time, and sometimes at irregular intervals.

Three months before coming under observation, she noticed that her urine became milky in color as it was passed. No deviation from the normal quantity was observed. It had a peculiar odor; an acid reaction; specific gravity .1019. On standing, it deposited a copious sediment, the upper part being somewhat turbid. The sediment was composed of urate of ammonia, and of very unusual abundance of renal and vesical epithelium. Heat and nitric acid gave copious precipitate of albumen.

Sulphuric ether, agitated with the urine, removes the fat, which collects in quite a thick layer between the two fluids. Chloroform affects it in a similar manner.

On microscopic examination, no tube casts were to be found.

From time to time small whitish clots pass with the urine from the bladder. These were found to consist of an amorphous stroma, entangling multitudes of oil globules and epithelial scales.

The patient was treated by tonics and generous diet, and in the course of two months was quite well of her troubles.

Dr. Metcalfe stated, that he had been informed by Brown Sequard that it was not uncommon in Cuba for persons to be affected as in this instance, and in other places within the tropics, especially young persons.

Dr. Elliot inquired if haematuria in young children was easily treated. He stated that, in the case of a child, about two years of age, who suffered in this way, the symptoms yielded readily to gallic acid.

Dr. Metcalfe desired to know the quantity of blood passed.

Dr. Elliot stated the quantity to be perceptible, the linen being stained.

Dr. Metcalfe asked how it was possible to diagnose a case of that kind without the microscope, and wished to know if the urine was albuminous.

Dr. Elliot remarked that he had no opportunity of testing the fluid by the microscope, and that the case recovered so easily, no other examination was made.

Dr. Bolton stated that he had seen two or three cases, in which the diaper was stained with blood, as he supposed, which yielded readily to administration of dilute sulphuric acid.

Dr. Metcalfe also presented the *brain* and *liver* of a man, with which he likewise submitted a history. He stated that Dr. Dalton had examined the tumor of the brain, and found it non-malignant, also the tumors of the liver, which are tuberculous.

Dr. Elliot said he supposed Dr. Metcalfe meant that they were the knotty tumors of Budd, said to contain a cheese-like matter, as is the case with those presented.

Dr. Metcalfe said he considered them tuberculous.

Dr. Krakocitzer presented the uterus, and a portion of the large intestine, from a patient who had died of peritonitis. The woman had passed through the allotted period of pregnancy, was attended by a midwife, and delivered in half an hour. On the morning of the fourth day, the patient sat up, and feeling very cold and chilly, was obliged to go to bed again. Three or four hours later, she felt very sick, and in four days died. The autopsy revealed copious effusion into the cavity of the peritoneum, and, also, the fact, that inflammation of the bowels had existed to a certain extent. A short distance above the ileo-caecal junction, a bridle or false ligament existed on the anterior side of the cecum, drawing about three inches of the tube into the space of about three quarters of an inch, thus forming a pouch posteriorly. The membrane of the stomach showed an irritated surface from the administration of calomel. There was no pus found in the veins of the uterus or ovaries. There were some slight, but old, adhesions of the fallopian tube to the ovary of one side. Eight years ago, the patient suffered from intermittent fever, and the spleen was found somewhat hardened, and adherent to its surroundings.

Dr. Donaghe presented a uterus of a patient who had died of puer-

peral fever. He presented the specimen more for enquiry on a point of jurisprudence, than on account of its rarity.

The patient arrived in town from Washington, and took board with a female physician, in January last. A few days after her arrival, she was taken with chills, pain, &c., and died in twelve days. Autopsy exhibited the breasts fully developed, the glands containing milk. Abdomen tympanitic—the cavity of the peritoneum containing about two quarts of sero-purulent fluid. Adhesions existed to a certain extent. The uterus was large—cervix patulous, easily receiving the end of the finger. The place of placental attachment was very distinct. Phlebitis was found to have existed. In fact, the patient had metroperitonitis. The question now arises, "at what time had abortion been produced?"

Dr. Elliot, being appealed to by the President, answered that he should be unwilling to testify that abortion had been produced within twelve days.

Dr. Donaghe inquired as to the time the place of placental attachment remained observable.

Dr. Elliot thought it would vary considerably, especially if the placenta should not be thoroughly removed.

Dr. Metcalfe said he thought something might be learned from the size of the uterus. At Bellevue Hospital he had always seen the uterus large and flabby in persons dying with metroperitonitis.

Dr. Elliot spoke of a case at Bellevue Hospital, where the patient died at the end of thirteen days. The uterus was large and flabby.

Dr. S. C. Foster testified to the flabbiness of the uterus after death from this disease. He has seen cases wherein the point of placental attachment remained for a long time, and the uterus flabby after a long sickness.

Dr. Holcomb remarked that he had seen cases in which the uterus was quite firm in death, following abortion.

Dr. Bibbins presented a mouse having upon its head a cutaneous disease, by which one eye had been destroyed.

Dr. Dalton had examined the encrustation by the microscope, and found it to be the same with the porrigo favosa affecting man, and like that which affected the cat presented before the Society some months ago.

Dr. Gentry presented a multi-lobular fatty liver, as a curiosity. It was taken from a patient of intemperate habits, who died in Bellevue Hospital, of phthisis. A vomica having formed near the surface of the lung, perforation of the pleura followed, and pneumothorax hast-

ened off the patient. The number of lobes is thirteen, several of which are pedunculated, but the majority are sessile, each contributing its part, seemingly, in the natural function of the organ—being supplied with the necessary elements therefor.

Dr. Metcalfe thought this the first of the kind presented before the Society.

Dr. O'Rourke said that several years ago one was presented very similar, having twelve lobules.

January 23. *Dr. F. C. Finnell* presented the uterus, stomach, liver, and one kidney, obtained from a young woman, twenty-three years of age, unmarried, who died this morning, of puerperal convulsions, three months and a half advanced in pregnancy. She had been in a state of great despondency at the absence of her lover. Last evening, she retired, complaining of pain in her back and abdomen. In the course of the night she was seized with convulsions, which continued until seven o'clock this morning, when she died. Between the interval of the recurrence of the convulsions, she was in a comatose condition. The autopsy revealed the kidneys congested, the liver covered with spots, resembling purpura haemorrhagica, as seen on the surface of the body. The mucous membrane of the stomach was likewise studded with similar spots.

Dr. Metcalfe inquired if there was any suspicion of poison being taken.

Dr. Finnell replied that there was, but no evidence.

The next specimen, presented by *Dr. Finnell*, was *cirrhosis of the liver*, occurring in a woman, twenty-two years old, admitted into St. Vincent's Hospital, on the 12th of this month, having a chronic ulcer of the leg. The second day after admission, she complained of a sensation of faintness, and was, in consequence, unable to leave the bed. In a few hours, the skin became jaundiced, and, on the following morning, the presence of abdominal effusion was evinced by distinct fluctuation. She had no pain. January 14th—Commenced vomiting; pulse 85; mind clear; skin cool. She expressed a desire to return home, if her sickness was likely to prove serious. In the evening, she vomited a large quantity of blood. Shortly after, she died.

Post mortem examination revealed the peritoneal cavity, containing three quarts of serum. In the stomach was found a quantity of coagulated blood. On carefully washing the organ, no morbid appearance was observed. The liver was extensively cirrhoued, being diminished to one-half its natural size, nodulated, and firm in tex-

ture. The vena portæ was filled with fibrinous coagula. The hepatic, cystic, and common ducts were much contracted.

Dr. Finnell next exhibited the stomach of a child, four years of age, who was poisoned by forty grains of nitrate of silver. The case occurred in the practice of Dr. R. Belden, of Hudson street.

History—Catharine Gould, aged four years, swallowed, on the 1st of July, 1855, two scruples of nitrate of silver. For the first five or six days, no unpleasant symptoms were exhibited by the child, or perceived by its parents, the little one continuing to run about as usual, and amusing herself with her wonted plays and amusements. On or about the sixth day, it was attacked with violent mucous diarrhea, which continued for nearly two months, attended with extreme emaciation and impaired appetite. After the usual remedies had been given for some six weeks, ordered the following mixture : R. Bals. copaiba, 5ss ; mucil. g. acaica, 5ijss ; M. ; and administered in teaspoonful doses, every four hours. Twenty-four hours after using it, the lips, gums, and teeth, became encrusted with the caustic, on the mucous membrane of the mouth and fauces. The action of the nitrate of silver was evident. The sputa appeared as if nitrate of silver had been dissolved in them. Continued the use of the balsam, &c. On the ninth day after commencing the balsam, the diarrhoea became less, the action of the caustic in the mouth, on the lips, and teeth, disappeared, and in about two weeks, all unpleasant symptoms had subsided, the child improved in flesh, and became apparently well, and continued so until the beginning of last December (five months after swallowing the poison), when it showed symptoms of typhoid fever, such as a dry, mahogany-colored, and fissured tongue. Pulse 120 per minute, and small ; very restless ; skin hot, dry, sensitive, and of a dusky tint ; eyes glassy and wild, pupils dilated ; an inveterate disposition to pinch its own nose ; some delirium ; great languor ; and spasmodic movements of upper and lower extremities. These symptoms continued more or less severe for fifteen days, when the child began to improve, and on the 18th was convalescent ; the tongue became moist, and lost its brownish hue and fissures ; skin natural, moist ; all the secretions normal. Took nourishment, and continued to improve for some two or three days ; but after that period, a relapse of the above-mentioned symptoms recurred, and continued for a few days, when it again began to improve, in four weeks from the first attack of typhoid fever. In the beginning of January, 1856, the child was permitted to eat apple-pie, rather inferiorly baked, and from that period there was no disposition to take

nourishment. On the following day it began to vomit biliary matter, and continued to do so until death. It invariably refused nourishment. Great thirst, loss of appetite, and vomiting of bile, were the only symptoms observed. The alvine evacuations were natural. Patient free from pain or tenderness during the whole period, until about three hours before death, when the little sufferer began to complain of excruciating pain in the epigastric region, and sunk very rapidly, on January 19th, 1856.

Autopsy, twenty-six hours after death.—The stomach presented three ridges, where the caustic had probably first rested. At these points, the mucous membrane was much thickened and elevated.

Dr. Markoe inquired if there was any evidence of arg. nit. in the discharges.

Dr. Finnell replied, that point was not looked into.

Dr. Metcalfe suggested that, as this was an interesting and novel case in the annals of the Society, the elevations of the stomach be submitted to minute examination by the microscope, to learn what changes, if any, had occurred in its structure, and he moved that Dr. Clark, in connection with Dr. Finnell, be requested to make the examination.—Adopted.

Dr. Finnell next presented a specimen of *cirrhosis of the liver*, obtained from a man, forty-four years old, who applied a few months since for advice at the Demilt Dispensary, suffering then from debility and abdominal effusion. At one period he had been very intemperate, but of late years had entirely abstained from drink. In May, 1853, copious haematemesis occurred, which has been repeated on several occasions. At the time of his application, the prominent symptom observed was the ascites. Examination of the heart and lungs detected nothing abnormal. No albumen in the urine.

Diagnosis—Dropsy, a consequence of *cirrhosis*. *Treatment*—Palliative.

Post-mortem examination (furnished by *Dr. Wm. B. Bibbins*) revealed:—

Lungs healthy, but a single old pleuritic adhesion, which connected not very firmly the base of the left lung to the diaphragm.

The *heart* was in a normal state, except a few small patches of organized lymph upon the surface, showing that slight pericarditis had formerly existed.

Abdomen—The intestines were glued together by extensive old peritoneal inflammation, apparently having no relation to the recent operation of paracentesis abdominis.

Liver.—Right lobe was adherent to the diaphragm, and part of the left, from firmness of adhesion, was in the removal torn off. Cirrhosis had occasioned considerable contraction. On expression, no pus, only serum, exuded.

Kidneys.—The left had lost entirely the line of distinction between the cortical and middle pyramidal portions, while the right showed a similar diseased condition, not as far advanced, effused fibrin giving them a very distinct outline.

Spleen.—Generally adherent, enlarged, carnified, with much fibrin thrown out around the vessels.

The *stomach* contained a large quantity of venous blood; was lined with inspissated mucus, but presented no ulcerations or other lesions.

The opinion seems warranted that not only the contraction of the portal vein, but also the inflammation of the smaller mesenteric veins, during the peritonitis, causing obstruction to the circulation, from fibrinous effusion then, and the subsequent contraction of their surrounding cellular tissue, produced the ascites.

Dr. Clark remarked, that the cases of cirrhosis were interesting in one particular, viz., haematemesis, without any lesion of the stomach. Dr. Metcalfe had first called the attention of members, a few years since, to the frequent occurrence of this symptom in the disease in question. The liver being firm and hard, and the circulation obstructed, it is easily conceived how the hemorrhage of the stomach is a consequence of the obstructed circulation.

Dr. McCready laid before the Society a specimen of *aneurism* of the *aorta*, bursting into the oesophagus, obtained from a young man, twenty-eight years of age.

Charles H., aged twenty-eight, applied to Dr. McCready on the 13th September, 1855, for advice. He was a well-built, fine-looking young man, accustomed to much active exercise in the open air. According to his statement, his health had always, for a number of years, been perfect, and he now was well, with the exception, that he was attacked at irregular intervals with an intolerable feeling of pain and oppression at the epigastrium, which, after lasting for a short time, would be relieved by the eructation of a quantity of watery fluid. The fluid thus brought up was without taste or smell. His appetite was good, his bowels regular, the tongue clean, the skin soft, and the complexion clear. The complaint had existed about a fortnight, and the attacks generally recurred once a day. Bismuth, and afterwards hydrocyanic acid, were ordered, but afforded no relief.

On the 23d of September, Mr. H. summoned Dr. McCready to

his house. Within the last twenty-four hours, he stated he had become much worse. He complained of a very distressing pain and sense of oppression, which he referred to the pericardium, and to the space under and at the cartilages of the false ribs on either side. He had had repeated attacks of vomiting, and could retain nothing on his stomach. His countenance was pale and anxious, and his respiration was hurried. The pulse was good, but somewhat increased in frequency. The bowels, heretofore regular, had not been moved for the last twenty-four hours. There was slight occasional and somewhat hoarse cough. His voice, too, was somewhat hoarse. This condition continued unrelieved for a week, apparently unaffected by the remedial agents employed (mercurial purges and enemata, nitrate of bismuth, morphia, hydrocyanic acid, with local applications to the seat of pain). Towards the latter part of this time, pain in the left shoulder, and along the inner side of the left arm, was much complained of. The peculiarity and obstinacy of the symptoms suggesting that they might be caused by some organic disease, his chest and abdomen were repeatedly and carefully examined, without any morbid signs being discovered. While he was perfectly quiet, he often enjoyed intervals of comparative ease, but the slightest exertion would renew his distressing symptoms, the deathly sickness at the stomach being most complained of. After any unusual exertion, too, or after a paroxysm of coughing, the hoarseness was much increased, so that the voice would become almost extinct. At the end of a week, his symptoms were gradually mitigated. He still, however, continued unable to take exercise, walking a short distance, two or three squares, riding in an omnibus, or ascending a flight of stairs, produced a renewal of the sickness at the stomach, and the difficulty of breathing, and the hoarseness.

November 1st.—To this time Mr. H. remained about the same, though there was perhaps some slight improvement; he was able to take a little more food, and retained it somewhat better; he complained, however, of great difficulty in swallowing solids. On again examining his chest, I found that in a space just beneath the inner third of the clavicle, and extending as far as the middle of the sternum, there was decided dulness on percussion; over the greater part of this space a pulsation, synchronous with that of the heart, could be felt, and the heart's sounds could be heard with great distinctness. The breath sounds were coarse and rough, and on the left side the respiratory murmur was interrupted. The left clavicle appeared somewhat crowded upward, and there was no pulse to be felt at the

left wrist. Nov. 8th—The patient was visited to-day by Dr. J. T. M., in consultation. Nov. 10th—Mr. H., during the past night, complained of a severe pain in the back, which distressed him greatly, and lasted for a number of hours. This morning he feels decidedly better than he has done for a long time, moving more briskly and freely; the pulse can be felt, though feebly, in the left radial artery. The abnormal pulsation is stronger; the area of dulness increased; the clavicle further crowded up. Nov. 25th—Much the same as before. The pain in the back has occasionally troubled him, but he now refers his distress mainly to the left side, in the shoulder and under the shoulder blade. There is decided fulness, almost tumor, back of each clavicle, and loud respiratory murmur can be heard there. The natural depression at the top of the sternum is lost, and replaced by a decided swelling. At times, according to the family, now on one side, now on the other, a soft egg shaped swelling has appeared there. Over the dull space the heart's sounds are now heard, faint, distant, and metallic in their character; the pulse still felt in the left radial, though with difficulty. It is likewise felt in both carotids, though much deeper seated than usual. He yesterday had a terrible and long continued paroxysm of dyspnoea—he is much distressed by paroxysms of cough. Dec. 1st—Mr. H. has again had a terrible attack of pain. This time, however, it was altogether in the back and right side, extending from beneath the clavicle to the hypochondrium; he felt, he expressed himself, as if he were being torn by red hot pincers; the difficulty of swallowing is much aggravated; the pain in the back, too, is becoming more constant and troublesome. He has lost flesh greatly, has a pale, sallow, anxious look, and is gradually losing strength. The area of dulness has considerably increased, extending from the junction of the second right rib, with the sternum, to about half way between the sternum and edge of the axilla on the left side, or about three inches in perpendicular depth. Dec. 17—During the day he had been particularly bright, cheerful, and free from pain. Early in the evening he had a severe spell of coughing, attended with a feeling of impending suffocation; suddenly he exclaimed something had burst inside, put both his hands upon his abdomen, became deadly pale, and expired.

Post Mortem examination revealed the dilation, commencing at the left carotid—left subclavian obstructed. The aneurism lay upon the esophagus, into which was a large, ragged opening. The stomach contained three pints of blood. The contents of the tumor were fluid—there was an entire absence of laminated fibrine, which circum-

stance accounted for the varying size of the mass from time to time, and the nervous phenomena were probably due to the stretching of the par vagum. The bodies of several of the vertebrae were absorbed.

Dr. Clark inquired if there were any atheromatous patches.

Dr. McCready replied that a few spots were observed.

Dr. Isaacs considered the symptoms explained in a remarkable degree by the pathological condition of the specimen.

Dr. Thomas F. Cock presented a specimen of *cancerous disease of the small intestines*, removed from a female patient twenty-three years of age, single, admitted into the New York Hospital on the 17th of December, 1855. She stated she had been subject to obstinate and frequent attacks of nausea and vomiting, with pain, resembling cramps, increased on pressure in the right iliac fossa. The first attack occurred in June last. Of late, the paroxysms have increased in number and severity. On admission, she was pale, emaciated, and cachectic; abdomen sunken, breath offensive, tongue moist, red, and furred, substance vomited green and abundant. Physical examination revealed the organs of the chest healthy; the entire trouble was referred to the abdomen. She continued comparatively comfortable for a month after admission, when (18th Jan., '56), at the morning visit, she was found in much distress, having suffered greatly during the night. Examining the abdomen, a tumor was found situated in the epigastric and umbilical regions, extending to both hypochondria, well defined, hard, painful to the touch, and resembling, in form, a distended stomach. On the right side, there seemed to be a smaller tumor, connected by membranes with the larger mass; also, there could be felt a body of greater density than the remainder of the tumor, movable, situated to the right of the main tumor, giving a sensation similar to the hard parts of the foetus within its membranes, and between the two was a depression. The shape of the whole mass was semilunar, the concavity upward, greatest breadth near the centre, its margin (on the right) irregular, no fluctuation, its surface irregular and almost nodulated. It was conjectured that it might be the stomach, pushed below its natural position, and enlarged by carcinomatous growth. Treatment adopted was palliative and sustaining. The next day she had a copious evacuation of almost pure blood—about a pint; the day after, another. She died on Monday, the 20th January.

Post mortem examination. Externally, no evidence of a tumor. On opening the abdomen, marks of recent peritonitis observed. No tumor was found. The intestines were everywhere glued together by

old adhesions. The parts were so much disorganized that it was impossible to state particular portions of the intestines were diseased, other than to say the disorganization was confined to the small intestines. Commencing at a point where several small tumors existed, the intestines dilate, and below, for a space of eighteen inches, the gut was dark, soft, and permeated with small holes. Some of them were probably caused in removing the viscera, as the fluid in the abdominal cavity was similar to that found in the intestines themselves. Two feet below this it again changes, becoming more normal. The stomach was healthy. The little masses he considered of a cancerous nature.

Dr. T. M. Markoe presented a specimen of *cutaneous cancer*, removed from the back of a young woman, which commenced three years since, without any evident cause, in three small pimples. The absence of pain, its form, hardness, and appearance, induced him to consider it a variety of cancer.

Dr. Markoe next laid before the society a specimen of *luxation of the radius forwards* at the elbow, taken from a man about twenty-five years old, who entered the New York Hospital, some weeks ago, with a severe injury of the left elbow, received by a fall from a bridge down onto a railroad track, striking against the iron rail. When admitted, swelling had already taken place, and much obscured the diagnosis. The whole limb was deformed; a deformity, however, which was easier appreciated than described. On the anterior aspect of the elbow could be felt a long prominence, which moved on rotation of fore-arm, which motion produced abundant crepitus, apparently directly under the finger. A large lacerated wound existed on the posterior and outer aspect of the joint, from which numerous fragments—apparently from the side of the olecranon—were taken away. The injury was considered so serious—the joint being extensively opened behind—that but few attempts at reduction were made, and these unsuccessfully; it being a mere question of primary or secondary amputation. It was decided to leave the limb for secondary amputation, not overlooking the possibility of its being saved without operation. Hope of such a result was soon abandoned. The inflammation and suppuration following were so extensive and severe as very nearly to destroy him, and the arm was finally amputated, as the only means of saving his life. The diagnosis made by Dr. Markoe of the injury, at the time, was fracture of the neck of the radius, with displacement of shaft forward, as in luxation. There was undoubtedly fracture of the ulna lower down.

The *specimen* shows the head of the radius thrown forward upon the anterior surface of the humerus, and the ulna fractures three inches lower down. Now, on grasping the specimen, with the thumb on the head of the radius, the fingers behind embrace the portion of the ulna which is fractured. The crepitus thus transmitted was so clear and distinct, on rotating the forearm, as to lead to and explain the mistake made in the diagnosis.

Dr. J. T. Metcalfe presented an *aneurism* of the *aorta*, bursting into the *left bronchus*, removed from an inmate of *Bellevue Hospital*, aged twenty-four, admitted Dec. 18th, 1855.

Dr. Metcalfe then exhibited a *cast* of the *trachea*, obtained from a lying-in patient of *Bellevue Hospital*, attacked with laryngitis—the symptoms were so urgent as to demand the operation of laryngotomy. She died, partly from asthenia and partly from asphyxia. On inspection, false membrane was found behind the epiglottis, lining the whole interior of the larynx, and extending down to the fourth division of the bronchial tubes. The specimen is a complete cylindrical cast of the trachea.

Another Case of Membranous Croup in a Child five years old. Expectoration of an unusual cast of Trachea. Death.

Hannah Humes, aged five years, born in *New York*, was taken sick on the 27th September, with symptoms of *croup*. The mother, not supposing the child to be very ill, treated her herself; giving hot baths, several doses of castor oil, and an emetic dose of pulverized ipecac, which, however, did not produce vomiting. The child becoming worse, on the 30th September, a physician was called to see it, who found it with membranous croup, and, on examination of chest, detected pneumonia in both lungs; there was considerable dyspnoea coming on in paroxysms, pulse 110 and feeble, skin hot and dry, tongue slightly coated, bowels regularly moved.

Leeches ordered to the chest, to be followed by fomentations, a purgative of calomel and syrup ipecac, with tincture aconite rad. After the child had taken about half an ounce of the syrup ipecac, and about five drops of the aconite, she threw off this membrane, but continued to sink, and died on 1st October.

On inspection, the exudation is seen extending down to the fourth and fifth divisions of the bronchi.

Dr. Metcalfe also presented a similar instance in a girl thirteen years old, and a perfect *cast* of the *bronchial tube*, expectorated by a woman of fifty-three. She has been affected for four or five years with what might be termed *fibrous bronchitis*.

Dr. Clark suggested, that, in the last case, the casts were the result of local bronchial inflammation, due to the presence of tubercles. He had three times seen similar casts expectorated by persons afterwards presenting symptoms of tubercles.

Dr. Metcalfe observed, that, in 34 cases collected by *Dr. Peacock*, 20 entirely recovered ; and, as a general thing, they were not a consequence of tubercles.

Dr. Peaslee remarked that the specimens presented by *Dr. Metcalfe* were of great interest, since they show the same pathological condition of the air passages at very different periods of life—from infancy to over fifty years. In all these cases, inflammation of the lining membrane of the air passages had occurred, and a false membrane had been formed in consequence ; the disease being called “croup” in the first mentioned cases, and “fibrous bronchitis” in the last one. *Dr. Peaslee* does not believe there is anything *specific* in croup, whether pseudo-membranous or not so. He regards it as a mere *simple laryngitis* at first, becoming also a tracheitis, as it descends into the trachea ; and since it also often extends downwards into the bronchial tubes (as these specimens also demonstrate), it is then, of course, a *laryngo-tracheo-bronchitis*. Whether a false membrane is formed or not, in croup, depends upon other circumstances, and not upon the nature of the inflammation. If the plasma exuded upon the inflamed membrane be of good quality, and remain at rest and in perfect contact, it will become fibrillated (coagulated) into a false membrane ; in the opposite circumstances, the latter cannot be formed. In cases of laryngo-tracheitis, it is, therefore, far more likely to be formed in infants and young children, who have less power to expell the plasma, when first exuded, or soon after. In adults, for the same reason, in part, perhaps, females are more liable to the pseudo-membranous form of laryngo-tracheitis, or croup, than males are. *Dr. Peaslee* had before been himself acquainted with but three cases of croup in adults, and these were all in females. The last specimen shown by *Dr. Metcalfe*, was one of pseudo-membranous-bronchitis, and the others were of pseudo-membranous laryngo-tracheitis.

Another point of interest was suggested to *Dr. Peaslee*, by the fact, that the false membrane lining the larynx and trachea, was probably completely detached from the mucous membrane (if he was correctly informed) before death, and had shrunk somewhat, so as to obstruct the air tubes more than while in perfect contact. In all cases of croup with false membrane, *Dr. Peaslee* stated that the lat-

ter will become spontaneously detached, if the patients can be kept alive a sufficient time. For the new membrane is never vascular, and there is no vital connection between it and the mucous surface beneath.

Dr. Peaslee therefore thought the inference unavoidable, that a great object in the treatment of croup with false membrane should be, to sustain the patient's strength ; and that the heroic treatment of this disease so often adopted is all wrong, at least after the disease is fairly developed, and the new membrane is already formed.*

Dr. S. C. Pointer presented the *stomach and intestines* of a patient who died from *poisoning by arsenic*.

Agnes Corbet, a beautiful young woman, 21 years of age, was admitted to Bellevue Hospital on the 16th of January, 1856. She professed to have some uterine disease, and at 6 P. M., soon after her admission, when seen by her medical attendant, Dr. Frothingham, she complained of nausea ; her tongue was natural in appearance, and pulse slightly accelerated ; she was ordered a soothing saline draught. At eight o'clock, P. M., during the temporary absence of the doctor, I was called to see her, and noted the following symptoms :—Her countenance was not indicative of suffering, pulse 126, and wanting in volume, respiration 25 per minute, tongue natural, considerable tenderness on firm pressure on the epigastrium, skin moist, and temperature good, feet a little cold. She had a burning pain in the stomach, cramps in the legs, and a sensation of cold over the whole body, together with frequent violent efforts to vomit, though nothing was discharged. On being questioned, she acknowledged that she was perfectly well up to 3 P. M., but beyond this did not seem communicative in regard to the history of her illness. While cross-questioning her, she suddenly half rose in bed, seized me by the color, stared wildly in my face, and confessed that she had swallowed a teaspoonful of arsenic at 3 o'clock. Vomiting ensued almost immediately, and was incessant up to 8 o'clock. Up to this time there had been one alvine discharged, the character of which was not ascertained, and none subsequently occurred. There was a large quantity of dark brown turbid liquid by the bedside, which she had vomited, and which, on being tested immediately, gave the usual reaction of arsenic with the ammonio-nitrate of silver. In consequence of the copious vomiting which had already taken place, it was not thought advisable to use the stomach pump. A mixture of

* For Dr. Peaslee's views at length, of the Pathology and Treatment of Croup, see the AMERICAN MEDICAL MONTHLY for August and September, 1854.

equal parts of sweet oil and lime-water was administered, in doses of two ounces, every five minutes, whilst the hydrated sesquioxide of iron was in process of preparation. At 9 o'clock, she was restless ; pulse 130 and feeble, respiration 30, skin moist and cool, tongue natural, the burning pain at the epigastrium, chilliness and cramps in the legs increased, and urine suppressed. The iron was administered at short intervals, brandy and sesquicarbonate of ammonia injected into the rectum, and heat applied externally. She occasionally vomited small portions of the remedies administered, and the restlessness became more marked towards 10 o'clock. Soon after 12 M., she became insensible to external objects, but still appeared in great pain, as evinced by her groans. At 1 A. M., the pulse ceased at the wrist, respiration more labored and rapid, and at 3 o'clock (twelve hours after taking the poison) ceased entirely.

Nine hours after death, post mortem.—Rigor mortis well marked, nutrition good, slight ecchymosis at depending spots. The dura mater was somewhat congested. The brain was healthy, the lungs were in their natural state (except congestion of the large vessels), the right side of the heart was moderately distended, the left side contracted and empty. The liver appeared to have undergone some degree of fatty degeneration, but otherwise healthy. The stomach presented nothing unusual externally ; it contained about a quart of liquid closely resembling that vomited. Scattered here and there were numerous grayish white pulpy masses, resting upon portions of thickened and intensely injected mucous membrane. At one or two points near the pylorus the lining membrane was puckered, of a dark red color, and looking as though extravasation had taken place beneath it. The oesophagus was not affected, and the greater end of the stomach not so much as the lesser. The same evidences of inflammation were found in the duodenum and jejunum, the deep red color gradually growing paler towards the ileum, which presented very little evidence of disease, except near the ileo-cœcal valve, where the capillary vessels were seen beautifully injected. The same morbid appearances noticed in the duodenum were presented, perhaps more strikingly, in the cœcum, the redness fading on approaching the transverse colon, again assuming a deeper hue in the descending colon. The mucous membrane of the rectum exhibited narrow longitudinal bands of a fiery red color, having interposed narrower strips of pale and comparatively healthy tissue. At no point was there ulceration. Bladder empty. From the liquid vomited, and taken from the stomach on applying Reinseb's test, were obtained the characteristic octohe-

dral crystals of arsenous acid. Both the liquids and the white masses found in the stomach were tested at the Hospital, and, subsequently, by Professor Draper, by Marsh's methods, and the arsenical ring was deposited on pieces of glass. A white powder found in her pocket also proved to be arsenious acid.

Dr. Conant exhibited a specimen of necrosis of the tarsus, occurring in a patient nineteen years old. About fourteen months ago, the patient run a pin in the inferior part of the foot; the pin was removed, but still she suffered much pain, and the next day symptoms of tetanus appeared, which were, however, restrained by the administration of opium. An abscess formed, sometime after, and continued to discharge by two openings on the top of the foot. She suffered much, constitutionally, and it was concluded to remove the leg. The operation was performed. On examination, it was found that the bones were all ankylosed, the os-calcis being only diseased.

Dr. Ayres presented a specimen of *cancer of the colon*, which was obtained from a woman sixty-eight years old. Two and a-half years since, he was consulted for some slight gastric derangement. She had then a tumor in the right iliac fossa, which he attributed to impaction of the bowels. The feces were removed, and still the tumor remained. She became emaciated and pale, the countenance assumed an icterode hue, had alternations of diarrhoea and constipation, and occasional haemorrhage from bowels. A brother died of cancer of the brain.

On inspection, the *caput coli* is seen hard and firm, the intestines filled with fungous masses.

NEW YORK ACADEMY OF MEDICINE.

March 5. Dr. WILLARD PARKER, President, in the chair. The minutes of the last meeting were read and approved. Drs. M. G. Porter and P. O'Reilly were elected as resident members.

A letter was read from the venerable ex-President, Dr. John W. Francis, begging to be excused from giving the Academy a copy of his Valedictory Address, and requesting that it merely be placed on file.

A similar letter was presented from the President elect, in answer to a request from the Academy, to furnish a copy of his Inaugural Address for publication.

On motion, these requests were acceded to.

A letter was read from Dr. F. Campbell Stewart, dated Edinburgh, in which he expressed his warm interest in the Academy, and his gratification at hearing it spoken of as the prominent medical society in America, and promised a paper at his earliest convenience.

Dr. J. M. Smith read a letter from Dr. Samuel R. House, Resident Physician at Bangkok, Siam, stating that Prince Veromma Duang-Nang re tiret Sanik, of the Kingdom of Siam, desired him to thank the New York Academy of Medicine, for the high honor conferred on him in electing him as a Corresponding Fellow, and to say that he had received the diploma which had been forwarded to him by the Academy.

The Committee which was appointed to examine the voluntary essays on Cholera Infantum, declared themselves ready to report. The sealed envelope which accompanied the treatise which they deemed the most worthy of the prize of \$100 (which was offered by a few Fellows of the Academy), was opened, and James Stewart, M.D., of New York, was declared to be the successful competitor.

Dr. Charles E. Isaacs read an interesting and elaborate treatise on the Microscopic Anatomy of the Kidney, amply illustrated by twelve or thirteen original plates. On motion, it was referred to the section of Anatomy and Pathology. It will probably be published by the Academy.

A paper, addressed to the New York Academy of Medicine, by Prof. Simpson, of Edinburgh, on the Employment of Carbonic Acid Gas as a *Local Anaesthetic*, was read by the Recording Secretary. The local application of chloroform to mucous surfaces being inadmissible, Prof. Simpson has directed his attention to the use of carbonic acid gas as a substitute, and his experiments have been followed with flattering results. He asserts that, in the many distressing varieties of uterine affections, its action is almost incredible. Its use in diseases of the eye, ulcers of the tongue, throat, and cancerous affections of the breast; in neuralgia, burns, painful diseases of the lower intestines, &c., &c., has been fairly tested, and is recommended.

It is prepared by adding 5vj of crystallized tartaric acid to a solution of 3vijj of bi-carb. sodæ in six or seven ounces of water, which are mixed in a glass bottle, having a flexible tube to convey the gas to the point of application.

Dr. Detmold begged leave to refer the Academy to its records, and it would find that, some three or four years since, he had remarked on the use of carbonic acid gas as an anaesthetic, and stated that he

believed it would eventually supersede chloroform. He offered some interesting observations on the different modes of preparing the gas, and gave his theory of its action on the system, and hoped that the subject would be properly brought before the Academy.

Dr. Griscom coincided with the remarks of the last speaker, and hoped the subject would be referred to a special committee.

Dr. John Watson said, some twenty years since, he had employed this gas in photophobia, with some good results.

Dr. Stone moved the subject be referred to the sections of Theory and Practice and Obstetrics, which motion was seconded and carried. The paper will probably be published.

Dr. Beadle moved that the thanks of the Academy be returned to Prof. Simpson, for his kindness in furnishing the Academy with his able and instructive paper.

The motion was seconded by *Dr. Detmold*, and carried unanimously.—Adjourned.

CHRONICLE OF MEDICAL PROGRESS.

A Paper on the Effects of Lead on the Heart. By JOHN W. CORSON, M.D., late Physician to Brooklyn City Hospital; Physician to the New York Dispensary. Reprint from the New York *Journal of Medicine*.

[This is the paper of which, as will be remembered, an abstract was read by its author, at the last meeting of the American Medical Association, at Philadelphia. As we understand from good authority, the special committee to whom it was referred, first decided to publish it in its proper place in the last year's Transactions, requesting the author to prepare it accordingly, and then, at the last moment, the majority reconsidered their decision, and excluded it, without giving any satisfactory explanation, and without ever reading a line of the full paper, as carefully prepared at their request. Indeed, only one of those who condemned the paper, ever read, or heard even, the brief abstract prepared for Philadelphia. The author very properly withdrew the paper, and published it without endorsement.

We cannot but think that the very respectable gentlemen concerned committed a great error, for which they will be glad to atone. These delicate questions should be left to a large disinterested general committee of publication, who should have the moral courage to do their duty. Otherwise any rival professor, or member of a hostile clique, can make a motion for, and get himself appointed chairman,

or member, of a special committee to put a rival down, and his contributions to science.

As the publication of the paper in its present form is in fact a quiet appeal to medical public opinion, against the decision of the committee, we give it more space than we ordinarily should do, with so great a press of original matter. The whole paper is well worth reading, and would have done honor to the volume of Transactions. We quote, however, only the latter part of it.—[Ed.]

Symptoms.—Commencing with the most frequent, and their intimate companions, we may rapidly enumerate, italicising the most important. In the ten cases, *violet or purple streak of the gums*, the most constant and delicate test of lead contamination, either in disease or apparent health—was found in all ; its occasional associate, blackened, encrusted teeth, three times ; *dyspepsia*, nine ; its frequent concomitants, nausea and constipation, each three ; *partial paralysis*, seven ; and general muscular debility, three ;* *pains* in the joints, muscles, or head, seven ; emaciation moderate, and not of the skinny cadaverous kind sometimes seen, twice ; and lastly, lead jaundice of the regular dirty, tawny hue, and characteristic of the free absorption of lead by the lungs or stomach, once.

The *Heart symptoms*, as subjects of our special study, invite more attention.

The *weakened impulse* of the heart, characteristic as we have stated of either lead paralysis, or debility, was present more or less, nine times out of the ten. Just as with nice shades of difference in the pulse or sounds of the heart, it requires a little close attention and education of our senses to discriminate. A superficial or inexperienced observer might fail in its detection. We must seize a tranquil moment in the right position. The sight, hearing, and touch, must be delicately exercised. Variations in the visible movement, in rapidity, volume, sound, and strength, between morbidly slow or rapid *feeble tapping*, and the healthy *firm striking* of the heart must be carefully appreciated. Where lead colic prevails uncomplicated, with either paralysis or marked debility, the stimulus of pain seems generally to cause a *firm hard impulse*.

Faintness on Exertion, requires usually pointed questioning. The patient commonly complains of so many bad feelings, that he forgets this, unless made the object of his attention. We generally ask the easily understood question, if there is unusual faintness or oppression on going up stairs. It was recorded in seven of the above ten cases.

Syncope or actual fainting found in two of our cases, has been

* The following numbers represent the relative frequency of lead paralysis in different parts of the body, in a table of 102 cases, furnished by Tanquerel : General paralysis of upper extremities, 5 ; paralysis of shoulder, 7 ; do. of the arm, 1 ; arm, forearm, wrist, and fingers, 4 ; forearm, wrist, and fingers, 14 ; wrist and fingers, 26 ; wrist, 10 ; fingers, 30 ; vocal muscles (aphonia, 16—stammering, 15), 31 ; intercostals, 2 ; dorsal, pectoral, and sternomastoid, 1 ; general paralysis of lower extremities, 1 ; paralysis of thigh, 5 ; of thigh, leg, feet, and toes, 2 ; foot and toes, 3 ; foot, 2 ; toes, 2.

aptly termed by Bouillaud, "momentary paralysis" of the heart.* From the frequency of sudden death in organic cardiac affections, the occurrence of a protracted fainting fit with distress at the heart, naturally excites much alarm. In one case above, it occurred during sleep.

Palpitation, so far as the patient is concerned, may be defined to be a painful sense of the action of the heart. And this may be from excited sensibility, mechanical enlargement, overaction, or even want of action. When the heart is depressed, or, so to speak, slightly paralyzed by lead, the sensation of faltering or fluttering naturally excites the attention of the sufferer, and if intelligent, he may possibly describe his feelings by the term "sinking palpitation." It was noted eight times out of ten. Cardiac oppression and slight dyspnoea, are generally associated with palpitation, though often not specially mentioned.

Night-Mare and Troubled Dreams, depending probably on the same causes during sleep, occurred twice.

Great Despondency and Fear of Sudden Death, noticed in three of the above cases, are natural characteristics of the more oppressive forms of heart disease. Contrasted with the buoyant hope of consumptives, the depression of cardiac affections is peculiar. When long existing, the sufferers are apt to become prematurely careworn or gray.

The Pulse, as Tanquerel has observed, in lead paralysis, is almost uniformly soft, compressible, and slow. It usually ranges from 50 to 65, showing that the heart which propels it is feeble. In five instances above, the pulse is mentioned as "weak." On the contrary, the stimulus, of pain, generally renders the pulse in simple lead colic, like the heart's impulse, both hard and full.

Causes.—This term is of course used in a liberal sense, referring to any accessory circumstances or agencies. Anything that prostrates the system seems to act as a predisposing cause. An intelligent superintendent of white-lead works in Brooklyn, informed the writer, that a few days of hard drinking with any of the workmen, were sure to be followed by colic or paralysis. It is doubtless thus, that successive shocks of lead colic are often finally succeeded by palsy. In two of the cases given, there was just previously intermittent fever; in one each bronchitis, cholera, protracted lead colic, arthralgia, or intemperance.

As conditions acting as exciting causes, in our list seven were workers in some form of lead, and three were affected from drinking Croton water, beer, or soda-water, through lead pipes.

We have before alluded, in passing, to many known or unsuspected methods of exposure to lead. In illustration, we may simply add the following list from the great work of Tanquerel des Planches :† "Of 101 subjects of lead paralysis, there were manufacturers of white lead, 31; do. of minium, 6; painters of buildings, 22; do. of carriages, 4; do. ornamental, 5; grinders of colors, 6; manufacturers of German cards, 1; potters, 5; refiners, 3; plumbers, 3;

* Maladies du Cœur.

† Maladies de Plomb.

type founders, 4 ; printers, 3 ; lapidaries, 3 ; cutters of crystals, 1 ; manufacturers of acetate of lead, 2 ; do. sulphate of lead, 1 ; do. chromate of lead, 1."

Treatment.—The chief remedies to counteract the depressing effects of lead may be divided into two classes. The first may be termed *disinfectants*, such as the iodide of potassium, and the various preparations of sulphur ; and these act by eliminating the poison from the system, and thus remove causes.

The second class—if we may coin a word easily understood—may be designated *antiparalytics*, such as strychnia and electricity. These restore tone to the injured organs, and thus powerfully relieve effects.

Iodide of Potassium.—The “*disinfectant*” properties of this powerful antidote to the slow poison of lead and mercury have been mainly brought to light through the recent researches of M. Melsens of Paris. In an article inserted in this Journal some time since, we had occasion to publish some illustrative cases, with a brief review of the original memoir of this indefatigable observer.* M. Melsens, by well recognized facts, established two propositions : first, that *lead and mercury combine with the tissues of the body, and remain there for years*; and second, that the Iodide of Potassium acts as a powerful solvent to the compounds of both lead and mercury thus fixed in the system, disengaging them and draining them off, so to speak, by the urine through the kidneys. And he proved these principles by an array of chemical and clinical experiments. He took a large quantity of the iodide of potassium himself, and discovered it quickly, and almost exclusively, in his urine ; he gave it to a patient with mercurial palsy, and, on analyzing the urine, found the iodide of mercury ; he paralyzed and emaciated several dogs till nearly dead, by feeding them with the sulphate or carbonate of lead, and then restored them rapidly to health and flesh with the iodide of potassium ; and finally he cured, or greatly relieved, with the same remedy, three patients paralyzed by lead, and five by mercury. Experiments by others have since detected the iodide of lead in the urine of patients under this treatment for lead paralysis. Though M. Melsens gave the iodide of potassium without inconvenience in large doses for weeks and months, commencing with half a drachm and running up to a drachm and a half daily,—yet with this somewhat expensive article among the poor, we have succeeded very well in the more moderate dose of ten grains three times a-day for a few weeks or months. It is more cleanly and convenient, and less expensive, than sulphur baths. And if reduced to a single remedy, we believe none so efficacious.

Sulphur Baths.—Sulphur in every form is an antidote to lead. Sulphuric acid internally, the sulphates of magnesia and soda as purgatives, and sulphur as a laxative, have all been used. Natural sulphur springs have long been resorted to for bathing purposes, with great benefit, in lead affections. Our own of Virginia are excellent. Fortunately for the laboring classes, we have an admirable substitute highly recommended by Tanquerel, Dr. Alderson, and the best authorities.

* Cases testing the Iodide of Potassium as an Antidote, etc., September, 1853.

From four to six ounces of the sulphuret of potassium—an ordinary cheap article of commerce—may be dissolved in sufficient tepid water to make a comfortable bath for an adult. The patient may remain in this from twenty minutes to an hour, not using it so frequently as to produce too much debility, and sustaining the muscular strength in the meantime by strychnia, electricity, or other agents. In many cases a brown coating of the sulphuret of lead is formed on the skin, so that the poisonous metal is literally *soaked* out of the system. These baths, in moderation, are generally very grateful to the patient.

Antiparalytics.—In emergency we have adopted this term, to designate a subdivision of the class of tonics, noted for their special power in relieving paralysis; just as in medical language we have already accepted the terms antispasmodics or antiperiodics, from their power in arresting certain other symptoms of disease.

Nux Vomica, or Strychnia.—The antiparalytic power of the vomica nut, and its active principle strychnia, is too generally recognized to need much comment. Both, in large doses, are known to be powerful poisons, and both, in minute safe proportions, are valuable tonics. Linnaeus long ago suggested nux vomica in dyspepsia. Alone or combined with small quantities of rhubarb or aloes, the extract or tincture of nux vomica, are valuable remedies in constipation. Both these symptoms prevail in lead disease. While the extract and tincture have appeared to us most useful in indigestion and constipation, the alkaloid strychnia is the most uniform in strength, and most reliable in the restoration of parts paralyzed. Yet all the preparations of nux vomica possess this power. On the moderate exhibition of strychnia, as we know, prickings and spasmodic twitchings, or slight convulsive movements of the limbs, occur, producing a faint imitation of the tetanus, which some have termed *strychnism*.

These stimulating and vivifying effects seem at length to centre on the weak, or paralyzed muscles, and often happily end in cure.

Strychnia, it will be recollectcd, should be commenced cautiously, in doses of about one-twentieth of a grain in pill, or, what is more convenient, in solution of a grain to the ounce, of one part acetic acid, and three of water, and gradually increased to a quarter, or even half a grain three times a-day. Tanquerel commenced with the sixth, and ran up to even two grains in the twenty-four hours, and with great success. Where preceded or combined with *disinfectant* treatment, we have never found more than half the first mentioned proportions necessary. Sometimes it has been applied externally as an ointment, or to a blistered surface. In dispensary practice, among a class of patients where mistakes are more likely to occur, we have invariably preferred the milder and safer, though perhaps slower, tincture of nux vomica. Weber found, that, on touching the heart of a dead frog with a solution of strychnia, he produced rigid *tonic contraction*. We have long preferred it as a tonic to any other remedy,

in most forms of debility of the heart, and especially in that from lead.

Electricity, or Galvanism, has been used with more or less success as a remedy for paralysis, for a century. Tanquerel cured eight patients with lead palsy, who persevered with it, out of fifteen. Dr. Golding Bird, as stated in his valuable paper, in the *Guy's Hospital Reports*, was also very successful with this agent in paralytic cases. It is particularly suited to those that are slight and limited.

A gently stimulating current, not too violent, is commonly passed from the point of origin to the termination of the particular nerves affected.

We may further remark, that we think no plan of treatment perfect, that does not combine, either together or in succession, both a disinfectant and an antiparalytic agent. The most convenient and efficacious we believe to be the iodide of potassium and nux vomica, or strychnia. To these may be added good food, fresh air, and the flesh-brush. Sulphur baths and electricity are excellent auxiliaries if needed. To prevent a relapse, and, in fact, to prevent the disease altogether, nothing is so efficacious as that which a good house-wife once ranked next to the highest Christian virtue—*perfect cleanliness*. Free ventilation, frequent washing of the hands, face, and mouth, cleansing even the nails, wearing a compact linen suit, washed twice a week, and changed on leaving work, a light cap to protect the hair, and an early laxative in slight constipation—have protected the most exposed from an hour's suffering in many years.

In closing, we may remark, that although some authors have, in passing, alluded to palpitation and slow pulse, as present in isolated cases of lead paralysis, yet, in yielding to the evidence of our senses, and believing feeble impulse of the heart, and faintness on exertion, to be prevailing characteristics, we are forced beyond the beaten track. We urge not our opinions on others, but only ask fair consideration of our cases. One well established fact is worth a thousand visionary hypotheses. The vast domains of medicine are filled with the ruins of magnificent temples, reared by master minds, of which time has swept away beautiful columns and arches of theories, while their facts, as solid foundations, forever remain.

The evidence gathered in this discussion tends, as we believe, more or less, to establish the following conclusions :

1. That, allowing a due excess of force to carry on the embarrassed circulation in organic affections of the heart, it appears that certain symptoms in slow poisoning from lead, as well as in cardiac disease proper, typhus fever, and apparent death from catalepsy, or other causes, all tend to prove that, as a rule, the *impulse* may be termed the *pulse of the heart*, and that its more careful study than heretofore may aid us in the general diagnosis and treatment of disease.

2. That the symptoms of weakening of the heart in lead poisoning

are confined to cases of *partial paralysis*, or *general muscular debility*, accompanied usually by the purple streak of the gums, indigestion, constipation, pains in the head, muscles, or joints, and sometimes by lead jaundice ; and that, commencing and emphasizing with the most frequent, these heart symptoms from lead are : *weakened, or soft tapping impulse, faintness on unusual exertion, feeble and generally slow pulse, palpitation, cardiac uneasiness*, and to these are occasionally added, great despondency, or morbid fear of death ; suspicions of organic disease of the heart, fainting fits, nightmare, or troubled dreams.

3. That these depressing heart symptoms are absent in the earlier and more acute stage of lead poisoning, known as "*lead colic*," when, on the contrary, the stimulus of pain generally renders the impulse of the heart and the pulse at the wrist more firm than natural.

4. That skill in the detection of minute variations in the impulse of the heart, naturally requires a little careful attention and practice.

5. That these debilitating effects of lead most commonly occur in hearts previously sound, but they sometimes complicate existing organic cardiac disease from rheumatism or other causes.

6. That the agencies or causes of lead poisoning are very numerous, and often obscure, and that slighter cases, supposed to be ordinary dyspepsia, constipation, debility, or bilious colic, are frequently undetected.

7. That the above tests of the immediate influence of lead on the heart in disease, are further corroborated by experiments upon animals ; showing that, more mildly and slowly, *lead*, like digitalis, oil of tobacco, upas antiar, the woorara, and some other poisons, tends specially to paralyze the central organ of the circulation, and, like these, ultimately to produce what Bichat termed "*Death by the heart*."

8. That the remedies for the paralyzing influence of lead may be divided into two classes : *Disinfectants*, such as the iodide of potassium, and preparations of sulphur, and *Antiparalytics*, such as strychnia and electricity ; that the best treatment combines these two elements, and that on the whole, the most convenient and efficacious are free doses of the iodide of potassium, and minute proportions of strychnia or nux vomica.

9. That the above conclusions are founded mainly on the evidence of ten cases, principally among the badly nourished and improvident poor, finally resorting to public institutions ; and they may possibly be somewhat modified in future by more extended observation in private and more favorable practice.

Several Editorial and other articles prepared for this number of the MONTHLY, are crowded out.

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E. P. ALLEN.

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